SENSITIVITY ANALYSIS

CASES	IRR (%)
1. Original	14.5
2. Construction cost increased by 15%	13.0
3. Construction cost decreased by 15%	16.4
4. Yield or farm-gate price dropped by 15%	11.8
5. Yield or farm-gate price raised by 15%	17.4
6. Generation of benefits delayed by 2 years	11.9
7. Generation of benefits delayed by 3 years	10.9

As a consequence of the above analysis, it is confirmed that the project return is more sensitive to change in benefits than that in costs. In the same manner, it is revealed that the return to the project would be substantially affected by the delay in generating benefits. In this connection, for attaining expected yields of agro-products, it is of important that, apart from efforts of farmers themselves, an agricultural research center should realize the anticipated result.

L.3 FINANCING PLAN

L.3.1 Disbursement Schedule

The total project cost which summed up the project cost discussed in 7.2 of the Main Report and price contingency-inflation in Colombia was deflated by the factor of exchange rate between US$ and Col$ has been calculated to be Col$ 16,110,500,800 (US$ 16,203 thousand) and its annual disbursement schedule is as set forth in table below. Of this total cost, the foreign currency portion shall be provided by an international banking institution and the local one by budgetary arrangement of the Government of Colombia.

DISBURSEMENT SCHEDULE

YEAR	FOREIGN CURRENCY	LOCAL CURRENCY	TOTAL
1	781,877 (1,214)	72,404	854,291 (1,327)
2	1,148,849 (1,498)	466,832	1,615,680 (2,107)
3	1,732,951 (1,899)	793,074	2,526,025 (2,769)
4	3,084,047 (2,971)	1,839,625	4,923,672 (4,743)
5	4,309,207 (3,659)	1,881,654	6,190,861 (5,257)
Total	11,056,941(11,243)	5,053,589	16,110,530(16,203)

Note: Figures in ( ) are represented by US$

L.3.2 Amortization Schedule of Foreign Loan

The amortization schedule of foreign loan to be provided by an international banking institution is as given in Table 8.3.2. Provided that this loan should be rendered with an annual interest rate of 5% and loan period covering 25 years (grace period: 7 years, bi-annual repayment with per-capita rate of the principal), the maximum repayment amount shall be US$ 970,000 following on the 8th year of the amortization schedule.

Table L.1.1 ESTIMATION OF EXPORT PARITY PRICE

(1) COFFEE

- FOB value at port of export US$ 145.0/70 kg Converted value in ton: US$ 145 x 1000/70	US$ 2,071
- FOB value converted to Colombian peso (Converted at shadow exchange rate of @527.73 x 1.18) US$ 2,071 X 527.73 X 1.18	Col$ 1,289,656
- Handling charge at port	15,000
- Transport: port-threshing factory	12,000
- Factory-gate price (out)	Col$ 1,262,656
- Processing factor (Parchment coffee to threshed bean): 80% 1,262,656 x 0.8	Col$ 1,010,125
- Processing cost at factory	252,531
- Factory-gate price (in)	Col$ 757,594
- Local transport: factory-farm	6,000
EXPORT PARITY PRICE AT FARM	Col$ 751,594
	= Col$ 752,000/ton

(2) Passion Fruit

- FOB value at port of export (Concentrated juice)	US$ 2,230
- FOB value converted to colombian peso (Converted at shadow exchange rate of @527.73 x 1.18) US$ 2,230 x 527.73 x 1.18	Col$ 1,388,669
- Handling charge at port	18,000
- Transport: port-processing factory	14,600
- Factory-gate price (out)	Col$ 1,356,069
- Processing factor (fruit to concentrated juice): 9.5% 1,356,069 x 0.095	Col$ 128,826
- Processing cost	25,400
- Factory-gate price (in)	Col$ 103,426
- Local transport: factory-farm	12,000
EXPORT PARITY PRICE AT FARM	Col$ 91,426
	= Col$ 91,000/ton

(3) Beef

- FOB value at port of export	US$ 2,090
- FOB value converted to Colombian peso (Converted at shadow exchange rate of @527.73 x 1.18) US$ 2,090 x 527.73 x 1.18	Col$ 1,301,488
- Handling charge at port	65,004
- Transport: port-cold storage	15,000
- Processing cost in freezing	21,400
- Decrease of live weight during transport farm-cold storage	117,133
- Cold storage-gate price	Col$ 1,082,881
- Yield to produce meat from cattle: 53% 1,082,881 x 0.53	Col$ 573,926
- Decrease in freezing: 2% 573,926 x 0.02	11,478
- Net value at cold storage	Col$ 562,448
- Value of sub-products	60,420
- Transport: cold storage-farm	63,840
- EXPORT PARITY PRICE OF BEEF AT FARM	Col$ 438,188 = Col$ 438,000/ton

Table L.1.2 ESTIMATION OF IMPORT PARITY PRICE

(1) SOYBEAN

- FOB US GULF	US$ 235.00 *
- Insurance and freight	49.00
- CIF at port of import	US$ 284.00
- CIF value converted to colombian peso (Converted at shadow exchange rate of @527.73 x 1.18) US$ 284 x 527.73 x 1.18	Col$ 176,853
- Handling charge at port	15,490
- Transport: port-local market	12,600
- Import parity price at local market	Col4 204,943
- Transport: local market-farm	6,000
IMPORT PARITY PRICE AT FARM	Col$ 198,943
	= Col$ 198,900/ton

Note: * Price Prospects for Major Primary Commodities 1988-2000, The world Bank

(2) SORGHUM

- FOB US GULF	US$ 90.50 *
- Freight and Insurance	19.00
- CIF value at port of import	US$ 109.50
- CIF value converted to Colombian peso (Converted at shadow exchange rate of @527.73 x 1.18) US$ 109.50 x 527.73 x 1.18	Col$ 68,188
- Handling charge at port	15,490
- Transport: port-lpcal market	12,600
- CIF value at local market	Col$ 96,278
- Transport: local market-farm	6,000
IMPORT PARITY PRICE	Col$ 90,278
	= Col$ 90,300/ton

Note: * Price Prospect for Major Primary commodities 1988-2000, The World Bank

Table L.1.3 ECONOMIC PRICE AND COST FOR CROPS AND CATTLE-(1)

CROP: TOMATO

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	39.9	80,000	3,192,000	1,452,900	1,739,700
Without Project	20.0	80,000	1,600,000	1,011,500	588,500
Incremental Benefit					836,500

* 1-5 years: 25t/ha, 5-10 years: 30t/ha, 11-50 years: 43t/ha

Breakdown of Production Cost

	With Project	Without Project
Seed	12,900	12,900
Fertilizer	95,000	54,700
Chemicals	184,400	126,000
Machinery & equip.	115,100	80,000
Labor	387,900	347,900
Others	657,000	390,000
Total	1,452,300	1,011,500

CROP: ONION

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	14.7	96,000	1,411,200	918,400	492,800
Without Project	(n.a.)				
Incremental Benefit					

* 1-5 years: 12t/ha, 6-50 years: 15t/ha

Breakdown of Production Cost

	With Project	Without Project
Seed	83,600	
Fertilizer	166,000	
Chemicals	203,700	
Machinery & equip.	5,500	(n.a.)
Labor	375,200	
Others	84,400	
Total	918,400	

CROP: GREEN PEA

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	6.7	150,000	1,005,000	666,300	338,700
Without Project	(n.a.)				
Incremental Benefit					

* 1-10 years: 5t/ha, 11-40 years: 7t/ha

Breakdown of Production Cost

	With Project	Without Project
Seed	75,000	
Fertilizer	91,100	
Chemicals	57,900	
Machinery & equip.	176,900	(n.a.)
Labor	155,600	
Others	109,800	
Total	666,300	

Table L.1.3 ECONOMIC PRICE AND COST FOR CROPS AND CATTLE-(2)

CROP: KIDNEYBEAN

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	1.18	350,000	413,000	193,800	219,200
Without Project	0.73	350,000	255,500	118,100	137,400
Incremental Benefit					81,800

Breakdown of Production Cost

	With Project	Without Project
Seed	33,800	33,800
Fertilizer	27,300	5,000
Chemicals	12,900	3,500
Machinery & equip.	13,900	5,700
Labor	89,600	64,300
Others	16,300	5,800
Total	193,800	118,100

CROP: SOYBEAN

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	2.5	198,900	497,250	243,900	253,350
Without Project	2.3	198,900	457,470	234,800	222,670
Incremental Benefit					30,680

Breakdown of Production Cost

	With Project	Without Project
Seed	40,500	39,000
Fertilizer	22,200	21,400
Chemicals	15,600	15,000
Machinery & equip.	60,500	58,200
Labor	72,100	69,400
Others	33,000	31,800
Total	243,900	234,800

CROP: SORGHUM

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	4.5	90,300	406,350	178,300	228,050
Without Project	4.2	90,300	379,260	167,800	211,460
Incremental Benefit					16,590

Breakdown of Production Cost

	With Project	Without Project
Seed	16,200	15,000
Fertilizer	21,200	19,300
Chemicals	17,700	16,100
Machinery & equip.	35,900	33,200
Labor	43,200	41,600
Others	44,100	42,600
Total	178,300	167,800

Table L.1.3 ECONOMIC PRICE AND COST FOR CROPS AND CATTLE-(3)

CROP: MAIZE

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	3.00	150,000	450,000	264,600	185,400
Without Project	1.90	150,000	285,000	206,500	78,500
Incremental Benefit					106,900

Breakdown of Production Cost

	With Project	Without Project
Seed	6,600	5,300
Fertilizer	22,600	18,000
Chemicals	28,800	18,500
Machinery & equip.	10,800	1,800
Labor	130,200	103,600
Others	65,600	59,300
Total	264,600	206,500

CROP: CASSAVA

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	18.0	55,000	990,000	463,000	527,000
Without Project	18.0	55,000	990,000	463,000	527,000
Incremental Benefit					0

Breakdown of Production Cost

	With Project	Without Project
Seed	33,800	33,800
Fertilizer	35,400	35,400
Chemicals	25,200	25,200
Machinery & equip.	110,900	110,900
Labor	212,700	212,700
Others	45,000	45,000
Total	463,000	463,000

Table L.1.3 ECONOMIC PRICE AND COST FOR CROPS AND CATTLE-(4)

CROP: IMPROVED COFFEE

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	1.94	752,000	1,458,880	583,100	875,780
Without Project	1.94	752,000	1,458,880	583,100	875,780
Incremental Benefit					0

* 1st year: 0, 2nd year: 0.6t/ha, 3rd year: 1.9t/ha, 4th-5th year: 3t/ha
  6th year: 2.8t/ha, 7th year: 2.3t/ha
** Establishment & 1st year: 384,200, 2nd-7th years: 616,300

Breakdown of Production Cost

	With Project	Without Project
Seed	700	700
Fertilizer	118,700	118,700
Chemicals	12,800	12,800
Machinery & equip.	7,300	7,300
Labor	398,800	398,800
Others	44,800	44,800
Total	583,100	583,100

CROP: TRADITIONAL COFFEE

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project					
Without Project	0.65	752,000	488,800	305,400	183,400
Incremental Benefit					

Breakdown of Production Cost

	With Project	Without Project
Seed		100
Fertilizer		63,800
Chemicals		5,800
Machinery & equip.		3,700
Labor		180,000
Others		52,000
Total		305,400

Table L.1.3 ECONOMIC PRICE AND COST FOR CROPS AND CATTLE-(5)

CROP: PLANTAIN, SINGLE

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	13.00	51,300	666,900	410,900	256,000
Without Project	13.00	51,300	666,900	410,900	256,000
Incremental Benefit					0

* 1st year: 0, 2nd year: 10t/ha, 3rd-10th years: 15t/ha
** Establishment & 1st year: 784,500, 2nd-10th years: 369,400

Breakdown of Production Cost

	With Project	Without Project
Seed	11,000	11,000
Fertilizer	78,000	78,000
Chemicals	82,400	82,400
Machinery & equip.	37,100	37,100
Labor	140,600	140,600
Others	61,800	61,800
Total	410,900	410,900

CROP: PLANTAIN, IMPROVED & MIXED

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	5.95	51,300	305,235	184,800	120,435
Without Project	5.95	51,300	305,235	184,800	120,435
Incremental Benefit					0

* 1st Year: 0, 2nd Year: 3.5t/ha, 3rd-10th years: 7t/ha
** Establishment & 1st year: 353100, 2nd-10th year: 166,100

Breakdown of Production Cost

	With Project	Without Project
Seed	5,000	5,000
Fertilizer	35,100	35,100
Chemicals	37,000	37,000
Machinery & equip.	16,700	16,700
Labor	63,300	63,300
Others	27,700	27,700
Total	184,800	184,800

CROP: PLANTAIN, TRADITIONAL & MIXED

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	(n.a.)				
Without Project	1.71	51,300	87,723	79,700	8,023
Incremental Benefit					

* 1st Year: 0, 2nd-10th Years: 1.9t/ha
** Establishment & 1st Year: 119,700, 2nd-10th Year: 75,200

Breakdown of Production Cost

	With Project	Without Project
Seed		2,700
Fertilizer		15,900
Chemicals		15,000
Machinery & equip.	(n.a.)	2,900
Labor		15,500
Others		27,700
Total		79,700

Table L.1.3 ECONOMIC PRICE AND COST FOR CROPS AND CATTLE-(6)

CROP: ORANGE

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	22.60	46,800	1,057,680	418,000	639,680
Without Project	19.00	46,800	889,200	418,000	471,200
Incremental Benefit					168,480

* 1st-3rd years: 0, 4th year: 5t/ha, 5th year: 10t/ha, 6th year: 20t/ha
7th Year: 25t/ha, 8th-22th Years: 30t/ha, 23th Year: 25t/ha,
24th Year: 20t/ha, 25th Year: 10t/ha
** Establishment & 1st year: 500,800, 2nd-3rd years: 260,000
4th-5th Years: 330,700, 6th-25th Years: 609,000

Breakdown of Production Cost

	With Project	Without Project
Seed	4,500	4,500
Fertilizer	163,200	163,200
Chemicals	89,600	89,600
Machinery & equip.	7,500	7,500
Labor	147,000	147,000
Others	6,200	6,200
Total	418,000	418,000

CROP: PASSION FRUIT

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	25.00	91,400	2,285,000	1,013,800	1,271,200
Without Project	(n.a.)				
Incremental Benefit					

* 1st Year: 20t/ha, 2nd Year: 30t/ha
** Establishment & 1st year: 1,559,900, 2nd year: 467,600

Breakdown of Production Cost

	With Project	Without Project
Seed	300	
Fertilizer	157,800	
Chemicals	48,300	
Machinery & equip.	402,700	(n.a.)
Labor	58,500	
Others	346,200	
Total	1,013,800	

CROP: PITAYA

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	6.70	460,000	3,082,000	888,600	2,193,400
Without Project	(n.a.)				
Incremental Benefit					

* 1st Year: 0, 2nd Year: 1t/ha, 3rd Year: 3t/ha, 4th Year: 5t/ha
5th Year: 6t/ha, 6th-10th Years: 7t/ha
** Establishment & 1st Year: 2,939,300, 2nd-10th Year: 660,700

Breakdown of Production Cost

	With Project	Without Project
Seed	220,000	
Fertilizer	166,500	
Chemicals	45,000	
Machinery & equip.	176,300	(n.a.)
Labor	223,300	
Others	57,500	
Total	888,600	

Table L.1.3 ECONOMIC PRICE AND COST FOR CROPS AND CATTLE-(7)

CROP: BLACKBERRY

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	12.50	140,000	1,750,000	1,002,700	747,300
Without Project	(n.a.)				
Incremental Benefit					

* 1st year: 0, 2nd year: 16t/ha, 3rd year: 18t/ha, 4th year: 16t/ha
** Establishment & 1st year: 1,556,800, 2nd & 4th years: 805,500
3rd Year: 843,200

Breakdown of Production Cost

	With Project	Without Project
Seed	25,300	
Fertilizer	270,100	
Chemicals	59,400	
Machinery & equip.	11,500	(n.a.)
Labor	224,300	
Others	412,100	
Total	1,002,700	

CROP: LULO

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	6.70	170,000	1,139,000	871,700	267,300
Without Project					
Incremental Benefit					

* 1st Year: 0, 2nd-3rd Years: 10t/ha
** Establishment & 1st year: 899,600, 2nd year: 857,700

Breakdown of Production Cost

	With Project	Without Project
Seed	17,000	
Fertilizer	247,700	
Chemicals	392,300	
Machinery & equip.	22,900	(n.a.)
Labor	147,700	
Others	44,100	
Total	871,700	

CROP: TREE TOMATO

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	18.80	70,000	1,316,000	754,300	561,700
Without Project	(n.a.)				
Incremental Benefit					

* 1st Year: 0, 2nd Year: 25t/ha, 3rd-4th Years: 25t/ha
** Establishment & 1st Year: 790,100, 2nd Year: 859,000, 3rd-4th Years: 684,00

Breakdown of Production Cost

	With Project	Without Project
Seed	220,000	
Fertilizer	166,500	
Chemicals	45,000	
Machinery & equip.	176,300	(n.a.)
Labor	223,300	
Others	57,500	
Total	888,600	

Table L.1.8 ECONOMIC PRICE AND COST FOR CROPS AND CATTLE-(8)

CROP: OTHER VEGETABLES *

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	(n.a.)				
Without Project	7.50	129,000	922,500	633,900	288,600
Incremental Benefit					

* Comprise onion and green pea

Breakdown of Production Cost

	With Project	Without Project
Seed		63,400
Fertilizer		102,800
Chemicals		104,600
Machinery & equip.	(n.a.)	72,900
Labor		212,300
Others		77,900
Total		633,900

CROP: OTHER FRUITS *

	Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	(n.a.)				
Without Project	17.80	85,000	1,513,000	950,000	563,000
Incremental Benefit					

* Comprise pitaya and passion fruit

Breakdown of Production Cost

	With Project	Without Project
Seed		110,100
Fertilizer		162,100
Chemicals		46,700
Machinery & equip.	(n.a.)	289,500
Labor		140,900
Others		201,900
Total		951,200

Table L.1.3 ECONOMIC PRICE AND COST FOR CROPS AND CATTLE-(9)

CROP: CATTLE OF DOBLE PURPOSES

		Unit Yield (ton/ha)	Farm-gate Price (Col$/ton)	Gross Return (Col$/ha)	Production Cost (Col$/ha)	Net Return (Col$/ha)
With Project	Beef	0.252	438,000	110,376		
	Dairy	3.500	85,000	297,500		
	Total			407,876	274,300	133,576
Without Project	Beef	0.153	438,000	67,014		
	Dairy	2.000	85,000	170,000		
	Total			237,014	190,300	46,714
Incremental Benefit						86,862

* 1st-2nd years, 4th-5th years, 7th-8th years, 10th-11th years: 0;
  3rd, 6th, 9th & 12th years: 0.756 ton/ha
** Establishment & 1st year: 794,000, 4th, 7th & 10th years: 443,000
   2nd-3rd years, 5th-6th years, 8th-9th years & 11th-12th years: 146,000

Breakdown of Production Cost

	With Project	Without Project
Steer	100,700	60,000
Feed	79,300	47,300
Fertilizer & Chemicals	22,000	12,600
Machinery & equip.	26,900	25,000
Labor	42,000	40,200
Others	3,400	5,200
Total	274,300	190,300

Table L.2.1 COMPARISON OF BENEFITS
"WITH" AND "WITHOUT" PROJECT

Unit: Col$

Year	Benefit With Project	Benefit without Project	Net Incremental Benefit
1	-2,555,986,400	-1,568,549,770	-987,436,630
2	131,598,996	411,883,130	-280,284,134
3	2,383,740,878	1,910,540,514	473,200,364
4	2,767,654,494	1,557,514,430	1,210,140,064
5	2,609,791,994	1,994,356,430	615,435,564
6	3,189,036,678	2,544,776,514	644,260,164
7	1,875,328,494	1,052,886,430	822,442,064
8	1,997,552,494	347,927,730	1,649,624,764
9	1,956,947,178	1,042,588,514	914,358,664
10	1,623,031,894	844,670,430	778,361,464
11	2,253,641,894	1,655,987,830	597,654,064
12	4,142,950,378	2,570,707,214	1,572,243,164
13	1,368,487,194	351,740,430	1,016,746,764
14	2,603,229,494	1,617,228,430	986,001,064
15	2,151,276,878	900,455,814	1,250,821,064
16	1,946,522,494	2,218,430	1,944,304,064
17	2,523,831,994	1,281,512,430	1,242,319,564
18	3,790,440,678	2,674,384,514	1,116,056,164
19	2,722,144,494	1,506,514,430	1,215,630,064
20	3,881,876,494	1,941,248,430	1,940,628,064
21	2,588,610,578	1,780,387,914	808,222,664
22	586,626,594	-269,091,570	855,718,164
23	1,460,530,494	464,560,430	995,970,064
24	3,699,703,678	1,961,540,514	1,738,163,164
25	1,541,775,194	481,348,430	1,060,426,764
26	3,047,977,494	2,070,856,430	977,121,064
27	3,615,740,878	2,493,776,514	1,121,964,364
28	2,879,710,494	1,103,886,430	1,775,824,064
29	1,388,923,994	271,427,730	1,117,496,264
30	2,112,024,678	1,119,088,514	992,936,164
31	1,158,515,894	429,801,830	728,714,064
32	3,616,927,194	1,967,179,130	1,649,748,064
33	3,614,803,178	2,597,884,514	1,016,918,664
34	2,367,467,894	1,427,906,430	939,561,464
35	2,721,078,494	1,566,228,430	1,154,850,064
36	2,895,755,678	951,455,814	1,944,299,864
37	135,999,194	-1,073,947,570	1,209,946,764
38	2,482,013,494	1,358,012,430	1,124,001,064
39	3,906,628,878	2,623,384,514	1,283,244,364
40	3,501,818,494	1,557,514,430	1,944,304,064
41	2,330,483,394	1,500,879,830	829,603,564
42	2,984,735,378	2,117,079,214	867,656,164
43	828,792,494	-216,414,270	1,045,206,764
44	2,318,188,494	515,560,430	1,802,628,064
45	3,050,779,178	1,885,040,514	1,165,738,664
46	2,638,855,894	1,557,514,430	1,081,341,464
47	3,229,906,494	2,019,856,430	1,210,050,064
48	4,445,419,678	2,544,776,514	1,900,643,164
49	1,192,307,194	27,720,430	1,164,586,764
50	1,400,385,494	347,927,730	1,052,457,764
Total	117,105,584,852	61,823,734,844	55,281,850,008

Table L.2.2 AGRICULTURAL BENEFITS "WITH" PROJECT-(1)

Year	Tomato	Onion	Green pea	Kidneybean	Soybean	Sorghum	Maize	Cassava	Improved Coffee
1	28,623,500	7,241,600	1,255,500	10,740,800	93,486,150	46,750,250	7,416,000	36,363,000	-480,312,000
2	57,247,000	14,483,200	1,255,500	4,008,336	108,587,150	46,750,250	7,416,000	36,363,000	-335,456,000
3	82,473,100	21,724,800	1,255,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	506,996,000
4	82,473,100	21,724,800	1,255,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,219,840,000
5	82,473,100	21,724,800	1,255,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,219,840,000
6	124,473,100	30,652,800	1,255,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,090,232,000
7	162,473,100	39,580,800	1,255,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	766,212,000
8	201,273,100	48,508,800	1,255,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	-480,312,000
9	201,273,100	48,508,800	1,255,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	-335,456,000
10	201,273,100	48,508,800	1,255,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	506,996,000
11	300,073,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,219,840,000
12	398,873,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,219,840,000
13	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,090,232,000
14	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	766,212,000
15	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	-480,312,000
16	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	-335,456,000
17	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	506,996,000
18	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,219,840,000
19	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,219,840,000
20	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,090,232,000
21	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	766,212,000
22	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	-480,312,000
23	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	-335,456,000
24	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	506,996,000
25	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,219,840,000
26	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,219,840,000
27	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,090,232,000
28	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	766,212,000
29	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	-480,312,000
30	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	-335,456,000
31	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	506,996,000
32	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,219,840,000
33	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,219,840,000
34	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,090,232,000
35	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	766,212,000
36	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	-480,312,000
37	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	-335,456,000
38	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	506,996,000
39	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,219,840,000
40	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,219,840,000
41	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,090,232,000
42	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	766,212,000
43	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	-480,312,000
44	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	-335,456,000
45	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	506,996,000
46	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,219,840,000
47	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,219,840,000
48	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	1,090,232,000
49	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	766,212,000
50	499,753,100	48,508,800	5,755,500	6,012,594	124,394,850	46,750,250	7,416,000	36,363,000	-480,312,000
Total	30,913,619,300	2,243,011,200	242,775,000	303,353,708	6,173,126,100	2,337,512,500	370,800,000	1,818,150,000	27,431,152,000

Table L.2.2 AGRICULTURAL BENEFITS "WITH" PROJECT-(2)

Year	Plantain (Single)	Plantain (Mixed)	Orange	Pitaya	Passion Fruit	Blackberry	Lulo	Tree Tomato	Cattle	Total
1	-94,140,000	-143,358,600	-58,092,800	-176,358,000	3,217,200	-249,088,000	-143,936,000	-126,416,000	-1,319,379,000	-2,555,986,400
2	17,232,000	5,460,700	-40,176,000	-12,042,000	27,292,800	-18,728,000	2,032,000	16,144,000	193,629,000	131,598,996
3	48,012,000	78,358,900	-45,176,000	43,158,000	3,217,200	268,958,400	159,694,800	196,975,300	797,157,084	2,383,740,878
4	48,012,000	78,358,900	-27,800,000	98,358,000	27,292,800	708,679,500	136,140,100	472,097,000	-319,713,000	2,767,654,494
5	48,012,000	78,358,900	-4,720,000	181,158,000	3,217,200	226,921,600	136,140,100	200,846,000	193,629,000	2,609,791,994
6	48,012,000	78,358,900	10,464,400	236,358,000	27,292,800	191,303,500	159,694,800	172,846,000	797,157,084	3,189,036,678
7	48,012,000	78,358,900	36,564,400	236,358,000	3,217,200	268,958,400	136,140,100	196,975,300	-319,713,000	1,875,328,494
8	48,012,000	78,358,900	105,324,000	236,358,000	27,292,800	708,679,500	136,140,100	472,097,000	193,629,000	1,997,552,494
9	48,012,000	78,358,900	65,864,400	236,358,000	3,217,200	226,921,600	159,694,800	200,846,000	797,157,084	1,956,947,178
10	48,012,000	78,358,900	73,464,400	236,358,000	27,292,800	191,303,500	136,140,100	172,846,000	-319,713,000	1,623,031,894
11	-94,140,000	-143,358,600	73,464,400	-176,358,000	3,217,200	268,958,400	136,140,100	196,975,300	193,629,000	2,253,641,894
12	17,232,000	5,460,700	73,464,400	-12,042,000	27,292,800	708,679,500	159,694,800	472,097,000	797,157,084	4,142,950,378
13	48,012,000	78,358,900	86,027,200	43,158,000	3,217,200	226,921,600	136,140,100	200,846,000	-1,319,379,000	1,368,487,194
14	48,012,000	78,358,900	116,124,000	98,358,000	27,292,800	191,303,500	136,140,100	172,846,000	193,629,000	2,603,229,494
15	48,012,000	78,358,900	123,104,000	181,158,000	3,217,200	268,958,400	159,694,800	196,975,300	797,157,084	2,151,276,378
16	48,012,000	78,358,900	119,800,000	236,358,000	27,292,800	708,679,500	136,140,100	472,097,000	-319,713,000	1,946,522,494
17	48,012,000	78,358,900	118,400,000	236,358,000	3,217,200	226,921,600	136,140,100	200,846,000	193,629,000	2,523,831,994
18	48,012,000	78,358,900	84,624,400	236,358,000	27,292,800	191,303,500	159,694,800	172,846,000	797,157,084	3,790,440,678
19	48,012,000	78,358,900	79,044,400	236,358,000	3,217,200	268,958,400	136,140,100	196,975,300	-319,713,000	2,722,144,494
20	48,012,000	78,358,900	116,124,000	236,358,000	27,292,800	708,679,500	136,140,100	472,097,000	193,629,000	3,881,876,494
21	-94,140,000	-143,358,600	73,464,400	-176,358,000	3,217,200	226,921,600	159,694,800	200,846,000	797,157,084	2,588,610,578
22	17,232,000	5,460,700	73,464,400	-12,042,000	27,292,800	191,303,500	136,140,100	172,846,000	-319,713,000	586,626,594
23	48,012,000	78,358,900	52,584,400	43,158,000	3,217,200	268,958,400	136,140,100	196,975,300	193,629,000	1,460,530,494
24	48,012,000	78,358,900	28,104,400	98,358,000	27,292,800	708,679,500	159,694,800	472,097,000	797,157,084	3,699,703,678
25	48,012,000	78,358,900	-8,292,800	181,158,000	3,217,200	226,921,600	136,140,100	200,846,000	-1,319,379,000	1,541,775,194
26	48,012,000	78,358,900	-30,756,000	236,358,000	27,292,800	191,303,500	136,140,100	172,846,000	193,629,000	3,047,977,494
27	48,012,000	78,358,900	-38,176,000	236,358,000	3,217,200	268,958,400	159,694,800	196,975,300	797,157,084	3,615,740,878
28	48,012,000	78,358,900	-48,680,000	236,358,000	27,292,800	708,679,500	136,140,100	472,097,000	-319,713,000	2,879,710,494
29	48,012,000	78,358,900	-29,200,000	236,358,000	3,217,200	226,921,600	136,140,100	200,846,000	193,629,000	1,388,923,994
30	48,012,000	78,358,900	-38,495,600	236,358,000	27,292,800	191,303,500	159,694,800	172,846,000	797,157,084	2,112,024,678
31	-94,140,000	-143,358,600	4,844,400	-176,358,000	3,217,200	268,958,400	136,140,100	196,975,300	-319,713,000	1,158,515,894
32	17,232,000	5,460,700	73,844,000	-12,042,000	27,292,800	708,679,500	136,140,100	472,097,000	193,629,000	3,616,927,194
33	48,012,000	78,358,900	62,644,400	43,158,000	3,217,200	226,921,600	159,694,800	200,846,000	797,157,084	3,614,803,178
34	48,012,000	78,358,900	69,584,400	98,358,000	27,292,800	191,303,500	136,140,100	172,846,000	-319,713,000	2,367,467,894
35	48,012,000	78,358,900	73,464,400	181,158,000	3,217,200	268,958,400	136,140,100	196,975,300	193,629,000	2,721,073,494
36	48,012,000	78,358,900	73,464,400	236,358,000	27,292,800	708,679,500	159,694,800	472,097,000	797,157,084	2,895,755,678
37	48,012,000	78,358,900	86,027,200	236,358,000	3,217,200	226,921,600	136,140,100	200,846,000	-1,319,379,000	135,999,194
38	48,012,000	78,358,900	116,124,000	236,358,000	27,292,800	191,303,500	136,140,100	172,846,000	193,629,000	2,482,013,494
39	48,012,000	78,358,900	123,104,000	236,358,000	3,217,200	268,958,400	159,694,800	196,975,300	797,157,084	3,905,628,878
40	48,012,000	78,358,900	119,800,000	236,358,000	27,292,800	708,679,500	136,140,100	472,097,000	-319,713,000	3,501,818,494
41	-94,140,000	-143,358,600	118,400,000	-176,358,000	3,217,200	226,921,600	136,140,100	200,846,000	193,629,000	2,330,483,394
42	17,232,000	5,460,700	84,624,400	-12,042,000	27,292,800	191,303,500	159,694,800	172,846,000	797,157,084	2,984,735,378
43	48,012,000	78,358,900	79,044,400	43,158,000	3,217,200	268,958,400	136,140,100	196,975,300	-319,713,000	828,792,494
44	48,012,000	78,358,900	116,124,000	98,358,000	27,292,800	708,679,500	136,140,100	472,097,000	193,629,000	2,318,188,494
45	48,012,000	78,358,900	73,464,400	181,158,000	3,217,200	226,921,600	159,694,800	200,846,000	797,157,084	3,050,779,178
46	48,012,000	78,358,900	73,464,400	236,358,000	27,292,800	191,303,500	136,140,100	172,846,000	-319,713,000	2,638,855,894
47	48,012,000	78,358,900	73,464,400	236,358,000	3,217,200	268,958,400	136,140,100	196,975,300	193,629,000	3,229,906,494
48	48,012,000	78,358,900	52,584,400	236,358,000	27,292,800	708,679,500	159,694,800	472,097,000	797,157,084	4,445,419,678
49	48,012,000	78,358,900	40,667,200	236,358,000	3,217,200	226,921,600	136,140,100	200,846,000	-1,319,379,000	1,192,307,194
50	48,012,000	78,358,900	21,804,000	236,358,000	27,292,800	191,303,500	136,140,100	172,846,000	193,629,000	1,400,385,494
Total	1,535,940,000	2,444,830,500	2,580,353,600	6,580,320,000	762,750,000	16,482,540,000	6,769,696,000	12,402,899,600	5,612,755,344	117,105,584,852

Table L.2.3 AGRICULTURAL BENEFITS "WITHOUT" PROJECT-(1)

Year	Improved Coffee	Traditional Coffee	Plantain (Improve. & Mix)	Plantain (Trad. Mixed)	Plantain (Single)	Cassava	Soybean
1	-366,142,500	158,090,800	-143,358,600	11,446,740	-94,140,000	36,363,000	68,805,030
2	-198,509,900	117,749,200	5,460,700	11,446,740	17,232,000	36,363,000	68,805,030
3	643,942,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
4	1,356,786,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
5	1,356,786,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
6	1,227,178,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
7	903,158,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
8	-366,142,600	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
9	-198,509,900	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
10	643,942,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
11	1,356,786,100	117,749,200	-143,358,600	11,446,740	-94,140,000	36,363,000	68,805,030
12	1,356,786,100	117,749,200	5,460,700	11,446,740	17,232,000	36,363,000	68,805,030
13	1,227,178,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
14	903,158,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
15	-366,142,600	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
16	-198,509,900	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
17	643,942,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
18	1,356,786,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
19	1,356,786,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
20	1,227,178,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
21	903,158,100	117,749,200	-143,358,600	11,446,740	-94,140,000	36,363,000	68,805,030
22	-366,142,600	117,749,200	5,460,700	11,446,740	17,232,000	36,363,000	68,805,030
23	-198,509,900	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
24	643,942,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
25	1,356,786,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
26	1,356,786,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
27	1,227,178,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
28	903,158,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
29	-366,142,600	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
30	-198,509,900	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
31	643,942,100	117,749,200	-143,358,600	11,446,740	-94,140,000	36,363,000	68,805,030
32	1,356,786,100	117,749,200	5,460,700	11,446,740	17,232,000	36,363,000	68,805,030
33	1,356,786,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
34	1,227,178,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
35	903,158,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
36	-366,142,600	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
37	-198,509,900	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
38	643,942,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
39	1,356,786,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
40	1,356,786,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
41	1,227,178,100	117,749,200	-143,358,600	11,446,740	-94,140,000	36,363,000	68,805,030
42	903,158,100	117,749,200	5,460,700	11,446,740	17,232,000	36,363,000	68,805,030
43	-366,142,600	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
44	-198,509,900	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
45	643,942,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
46	1,356,786,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
47	1,356,786,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
48	1,227,178,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
49	903,158,100	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
50	-366,142,600	117,749,200	78,358,000	11,446,740	48,012,000	36,363,000	68,805,030
Total	34,096,243,400	5,927,801,600	2,444,830,500	572,337,000	1,535,940,000	1,818,150,000	3,440,251,500

Table L.2.3 AGRICULTURAL BENEFITS "WITHOUT" PROJECT-(2)

Year	Sorghum	Maiz	Kidneybean	Tomato	Orange	Vegetables	Fruits	Cattle	Total
1	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	4,906,200	500,000	-1,319,379,000	-1,568,549,770
2	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	193,629,000	411,883,130
3	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	26,000,000	797,157,084	1,910,540,514
4	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	-319,713,000	1,557,514,430
5	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	500,000	193,629,000	1,894,356,430
6	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	797,157,084	2,544,776,514
7	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	26,000,000	-319,713,000	1,052,886,430
8	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	193,629,000	347,927,730
9	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	500,000	797,157,084	1,042,588,514
10	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	-319,713,000	844,670,430
11	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	26,000,000	193,629,000	1,655,987,830
12	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	797,157,084	2,570,707,214
13	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	500,000	-1,319,379,000	351,740,430
14	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	193,629,000	1,617,228,430
15	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	26,000,000	797,157,084	906,455,814
16	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	-319,713,000	2,218,430
17	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	500,000	193,629,000	1,281,512,430
18	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	797,157,084	2,674,384,514
19	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	26,000,000	-319,713,000	1,506,514,430
20	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	193,629,000	1,941,248,430
21	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	500,000	797,157,084	1,780,387,914
22	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	-319,713,000	-269,091,570
23	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	26,000,000	193,629,000	464,560,430
24	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	797,157,084	1,961,540,514
25	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	500,000	-1,319,379,000	481,348,430
26	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	193,629,000	2,070,856,430
27	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	26,000,000	797,157,084	2,493,776,514
28	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	-319,713,000	1,103,886,430
29	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	500,000	193,629,000	271,427,730
30	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	797,157,084	1,119,088,514
31	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	26,000,000	-319,713,000	429,801,830
32	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	193,629,000	1,967,179,130
33	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	500,000	797,157,084	2,597,884,514
34	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	-319,713,000	1,427,906,430
35	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	26,000,000	193,629,000	1,566,228,430
36	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	797,157,084	951,455,814
37	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	500,000	-1,319,379,000	-1,073,947,570
38	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	193,629,000	1,358,912,430
39	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	26,000,000	797,157,084	2,623,384,514
40	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	-319,713,000	1,557,514,430
41	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	500,000	193,629,000	1,500,879,830
42	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	797,157,084	2,117,079,214
43	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	26,000,000	-319,713,000	-216,414,270
44	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	193,629,000	515,560,430
45	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	500,000	797,157,084	1,886,040,514
46	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	-319,713,000	1,557,514,430
47	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	26,000,000	193,629,000	2,019,856,430
48	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	797,157,084	2,544,776,514
49	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	500,000	-1,319,379,000	27,720,430
50	41,446,160	2,826,000	2,748,000	13,535,500	13,803,000	8,348,700	77,000,000	193,629,000	347,927,730
Total	2,072,308,000	141,300,000	137,400,000	676,775,000	690,150,000	419,992,500	2,243,500,000	5,512,755,344	61,823,734,844

Table L.2.4 BENEFITS WITH ROAD CONSTRUCTION

Unit: Col$

YEAR	AGRICULTURAL OUTPUT	COST SAVE IN TRANSPORT	BENEFIT WITH ROAD COST.
1	15,056	923	13,896,688
2	31,250	923	28,843,750
3	49,265	923	45,471,595
4	55,514	923	51,239,422
5	49,668	923	45,843,564
6	52,522	923	48,477,806
7	52,236	923	48,213,828
8	57,034	923	52,642,382
9	52,616	923	48,564,568
10	52,395	923	48,360,585
11	48,964	923	45,193,772
12	59,178	923	54,621,294
13	52,906	923	48,832,238
14	52,506	923	48,463,038
15	52,743	923	48,681,789
16	57,936	923	53,474,928
17	52,469	923	48,428,887
18	54,989	923	50,754,847
19	54,206	923	50,032,138
20	60,032	923	55,409,536
21	49,124	923	45,341,452
22	47,473	923	43,817,579
23	50,239	923	46,370,597
24	57,771	923	53,322,633
25	49,317	923	45,519,591
26	48,993	923	45,220,539
27	50,851	923	46,935,473
28	55,456	923	51,185,888
29	47,238	923	43,600,674
30	50,642	923	46,742,566
31	46,736	923	43,137,328
32	57,362	923	52,945,126
33	54,513	923	50,315,499
34	52,982	923	48,902,386
35	53,419	923	49,305,737
36	58,880	923	54,346,240
37	51,230	923	47,285,290
38	52,425	923	48,388,275
39	55,722	923	51,431,406
40	60,223	923	55,585,829
41	48,084	923	44,381,532
42	51,761	923	47,775,403
43	50,927	923	47,005,621
44	57,636	923	53,198,028
45	53,865	923	49,717,395
46	52,893	923	48,820,239
47	52,946	923	48,869,158
48	58,928	923	54,390,544
49	48,770	923	45,014,710
50	46,134	923	42,581,682
Total	2,586,025		2,386,901,075

TABLE L.2.5 ECONOMIC INTERNAL RATE OF RETURN

UNIT: COL$ X 1000

YEAR	CONSTRUCTION COST	O/M COST	PROJECT COST	INCREMENTAL BENEFITS	PROJECT RETURN
1	571,765		571,765	-973,540	-1,545,305
2	840,496		840,496	-251,440	-1,091,936
3	1,035,000		1,035,000	518,672	-516,328
4	1,831,959		1,831,959	1,261,379	-570,580
5	2,002,581	50,160	2,052,741	661,279	-1,391,462
6		88,580	88,580	692,738	604,158
7		88,580	88,580	870,656	782,076
8		88,580	88,580	1,702,267	1,613,687
9		88,580	88,580	962,923	874,343
10		88,580	88,580	826,722	738,142
11		88,580	88,580	642,848	554,268
12		88,580	88,580	1,626,864	1,538,284
13		88,580	88,580	1,065,579	976,999
14		88,580	88,580	1,034,464	945,884
15		88,580	88,580	1,299,503	1,210,923
16		88,580	88,580	1,997,779	1,909,199
17		88,580	88,580	1,290,748	1,202,168
18		88,580	88,580	1,166,811	1,078,231
19		88,580	88,580	1,265,662	1,177,082
20		465,760	465,760	1,996,038	1,530,278
21		88,580	88,580	853,564	764,984
22		88,580	88,580	899,536	810,956
23		88,580	88,580	1,042,341	953,761
24		88,580	88,580	1,791,486	1,702,906
25		88,580	88,580	1,105,946	1,017,366
26		88,580	88,580	1,022,342	933,762
27		88,580	88,580	1,168,900	1,080,320
28		88,580	88,580	1,827,010	1,738,430
29		88,580	88,580	1,161,097	1,072,517
30		88,580	88,580	1,039,679	951,099
31		88,580	88,580	771,851	683,271
32		88,580	88,580	1,702,693	1,614,113
33		88,580	88,580	1,067,234	978,654
34		88,580	88,580	988,464	899,884
35		465,760	465,760	1,204,156	738,396
36		88,580	88,580	1,998,646	1,910,066
37		88,580	88,580	1,257,232	1,168,652
38		88,580	88,580	1,172,389	1,083,809
39		88,580	88,580	1,334,676	1,246,096
40		88,580	88,580	1,999,890	1,911,310
41		88,580	88,580	873,985	785,405
42		88,580	88,580	915,432	826,852
43		88,580	88,580	1,092,212	1,003,632
44		88,580	88,580	1,855,826	1,767,246
45		88,580	88,580	1,215,456	1,126,876
46		88,580	88,580	1,130,162	1,041,582
47		88,580	88,580	1,258,919	1,170,339
48		88,580	88,580	1,955,034	1,866,454
49		88,580	88,580	1,209,601	1,121,021
50		465,760	465,760	1,095,039	629,279
Total	6,281,801	5,167,800	11,449,601	57,668,751	46,219,150
				IRR =	0.1453123346

TABLE L.2.6 NVP AND B/C

UNIT: COL$ X 1000

YEAR	Project Costo	Incremental Benefit	NPV with discount rate of 12% Cost	Benefit
1	571,765	-973,540	510,504	-869,232
2	840,496	-251,440	670,038	-200,447
3	1,035,000	518,672	736,693	369,180
4	1,831,959	1,261,379	1,164,243	801,629
5	2,052,741	661,279	1,164,780	375,228
6	88,580	692,738	44,877	350,963
7	88,580	870,656	40,069	393,841
8	88,580	1,702,267	35,776	687,517
9	88,580	962,923	31,943	347,240
10	88,580	826,722	28,520	266,182
11	88,580	642,848	25,465	184,803
12	88,580	1,626,864	22,736	417,576
13	88,580	1,065,579	20,300	244,203
14	88,580	1,034,464	18,125	211,672
15	88,580	1,299,503	16,183	237,414
16	88,580	1,997,779	14,449	325,881
17	88,580	1,290,748	12,901	187,990
18	88,580	1,166,811	11,519	151,732
19	88,580	1,265,662	10,285	146,952
20	465,760	1,996,038	48,284	206,923
21	88,580	853,564	8,199	79,006
22	88,580	899,536	7,320	74,340
23	88,580	1,042,341	6,536	76,912
24	88,580	1,791,486	5,836	118,027
25	88,580	1,105,946	5,211	65,055
26	88,580	1,022,342	4,652	53,694
27	88,580	1,168,900	4,154	54,814
28	88,580	1,827,010	3,709	76,496
29	88,580	1,161,097	3,311	43,406
30	88,580	1,039,679	2,957	34,702
31	88,580	771,851	2,640	23,002
32	88,580	1,702,693	2,357	45,306
33	88,580	1,067,234	2,104	25,355
34	88,580	988,464	1,879	20,968
35	465,760	1,204,156	8,821	22,806
36	88,580	1,998,646	1,498	33,798
37	88,580	1,257,232	1,337	18,982
38	88,580	1,172,389	1,194	15,805
39	88,580	1,334,676	1,066	16,065
40	88,580	1,999,890	952	21,492
41	88,580	873,985	850	8,386
42	88,580	915,432	759	7,843
43	88,580	1,092,212	678	8,355
44	88,580	1,855,826	605	12,675
45	88,580	1,215,456	540	7,412
46	88,580	1,130,162	482	6,153
47	88,580	1,258,919	431	6,120
48	88,580	1,955,034	384	8,486
49	88,580	1,209,601	343	4,688
50	465,760	1,095,039	1,612	3,789
Total	11,449,601	57,668,751	4,710,110	5,831,184

NPV = 1,121,074

B/C = 1.24

Table L.2.7-(1) ECONOMIC INTERNAL RATE OF RETURN (CIRCASIA)

Unit: Col$ x 1000

Year	Construction Cost	O/M Cost	Project Cost	Incremental Benefit	Project Return
1	242,226		242,226	-14,795	-257,021
2	355,857		355,857	13,133	-342,724
3	438,465		438,465	335,855	-102,610
4	775,910		775,910	834,941	59,031
5	849,738	21,247	870,985	363,430	-507,555
6		37,522	37,522	322,387	284,865
7		37,522	37,522	513,058	475,536
8		37,522	37,522	919,955	882,433
9		37,522	37,522	441,410	403,888
10		37,522	37,522	496,774	459,252
11		37,522	37,522	627,373	589,851
12		37,522	37,522	1,049,014	1,011,492
13		37,522	37,522	1,046,680	1,009,158
14		37,522	37,522	721,640	684,118
15		37,522	37,522	730,328	692,806
16		37,522	37,522	1,229,414	1,191,892
17		37,522	37,522	757,903	720,381
18		37,522	37,522	672,311	634,789
19		37,522	37,522	821,954	784,432
20		197,295	197,295	1,187,118	989,823
21		37,522	37,522	732,007	694,485
22		37,522	37,522	763,937	726,415
23		37,522	37,522	779,657	742,135
24		37,522	37,522	1,137,788	1,100,266
25		37,522	37,522	1,046,680	1,009,158
26		37,522	37,522	721,640	684,118
27		37,522	37,522	730,328	692,806
28		37,522	37,522	1,229,414	1,191,892
29		37,522	37,522	757,903	720,381
30		37,522	37,522	672,311	634,789
31		37,522	37,522	845,388	807,866
32		37,522	37,522	1,187,118	1,149,596
33		37,522	37,522	708,573	671,051
34		37,522	37,522	763,937	726,415
35		197,295	197,295	779,657	582,362
36		37,522	37,522	1,137,788	1,100,266
37		37,522	37,522	1,046,680	1,009,158
38		37,522	37,522	721,640	684,118
39		37,522	37,522	730,328	692,806
40		37,522	37,522	1,229,414	1,191,892
41		37,522	37,522	781,337	743,815
42		37,522	37,522	672,311	634,789
43		37,522	37,522	821,954	784,432
44		37,522	37,522	1,187,118	1,149,596
45		37,522	37,522	708,573	671,051
46		37,522	37,522	763,937	726,415
47		37,522	37,522	779,657	742,135
48		37,522	37,522	1,137,788	1,100,266
49		37,522	37,522	1,046,680	1,009,158
50		197,295	197,295	721,640	524,345
Total	2,662,196	2,189,056	4,851,252	39,413,061	34,561,809

EIRR = 0.2844408998

Table L.2.7-(2) ECONOMIC INTERNAL RATE OF RETURN (RIGHT MARGIN)

Unit: Col$ x 1000

Year	Construction Cost	O/M Cost	Project Cost	Incremental Benefit	Project Return
1	157,000		157,000	-258,608	-415,608
2	230,894		230,894	-59,045	-289,939
3	284,204		284,204	75,250	-208,954
4	503,128		503,128	34,152	-468,976
5	549,730	13,775	563,505	230,122	-333,383
6		24,325	24,325	301,223	276,898
7		24,325	24,325	262,096	237,771
8		24,325	24,325	351,023	326,698
9		24,325	24,325	409,924	385,599
10		24,325	24,325	276,494	252,169
11		24,325	24,325	-54,434	-78,759
12		24,325	24,325	129,767	105,442
13		24,325	24,325	147,698	123,373
14		24,325	24,325	241,299	216,974
15		24,325	24,325	400,028	375,703
16		24,325	24,325	338,885	314,560
17		24,325	24,325	428,554	404,229
18		24,325	24,325	394,933	370,608
19		24,325	24,325	323,114	298,789
20		127,903	127,903	379,299	251,396
21		24,325	24,325	27,135	2,810
22		24,325	24,325	46,003	21,678
23		24,325	24,325	148,456	124,131
24		24,325	24,325	202,674	178,349
25		24,325	24,325	195,151	170,826
26		24,325	24,325	238,295	213,970
27		24,325	24,325	300,399	276,074
28		24,325	24,325	177,144	152,819
29		24,325	24,325	286,858	262,533
30		24,325	24,325	276,738	252,413
31		24,325	24,325	-152,233	-176,558
32		24,325	24,325	90,119	65,794
33		24,325	24,325	227,721	203,396
34		24,325	24,325	152,947	128,622
35		127,903	127,903	306,501	178,598
36		24,325	24,325	384,199	359,874
37		24,325	24,325	340,898	316,573
38		24,325	24,325	379,299	354,974
39		24,325	24,325	455,228	430,903
40		24,325	24,325	338,885	314,560
41		24,325	24,325	24,400	75
42		24,325	24,325	146,533	122,208
43		24,325	24,325	129,914	105,589
44		24,325	24,325	241,299	216,974
45		24,325	24,325	376,089	351,764
46		24,325	24,325	294,403	270,078
47		24,325	24,325	361,701	337,376
48		24,325	24,325	364,175	339,850
49		24,325	24,325	297,353	273,028
50		127,903	127,903	288,752	160,849
Total	1,724,956	1,419,134	3,144,090	11,298,809	8,154,719
				EIRR =	0.1070454666

Table L.2.7-(3) ECONOMIC INTERNAL RATE OF RETURN (LEFT MARGIN-2)

Unit: Col$ x 1000

Year	Construction Cost	O/M Cost	Project Cost	Incremental Benefit	Project Return
1	5,098		5,098	-16,242	-21,340
2	7,496		7,496	6,360	-1,136
3	9,227		9,227	21,428	12,201
4	16,335		16,335	-5,908	-22,243
5	17,848	447	18,295	8,638	-9,657
6		790	790	24,081	23,291
7		790	790	-2,533	-3,323
8		790	790	14,158	13,368
9		790	790	27,225	26,435
10		790	790	-669	-1,459
11		790	790	14,322	13,532
12		790	790	29,345	28,555
13		790	790	-5,359	-6,149
14		790	790	17,555	16,765
15		790	790	32,320	31,530
16		790	790	4,149	3,359
17		790	790	17,646	16,856
18		790	790	30,780	29,990
19		790	790	2,519	1,729
20		4,153	4,153	17,555	13,402
21		790	790	30,785	29,995
22		790	790	2,296	1,506
23		790	790	15,013	14,223
24		790	790	28,520	27,730
25		790	790	-9,132	-9,922
26		790	790	11,679	10,889
27		790	790	25,868	25,078
28		790	790	-2,590	-3,380
29		790	790	11,742	10,952
30		790	790	25,856	25,066
31		790	790	3	-787
32		790	790	15,855	15,065
33		790	790	29,902	29,112
34		790	790	2,152	1,362
35		4,153	4,153	15,848	11,695
36		790	790	30,334	29,544
37		790	790	-5,359	-6,149
38		790	790	17,555	16,765
39		790	790	32,320	31,530
40		790	790	4,149	3,359
41		790	790	18,096	17,306
42		790	790	30,780	29,990
43		790	790	2,519	1,729
44		790	790	17,555	16,765
45		790	790	30,334	29,544
46		790	790	2,296	1,506
47		790	790	15,848	15,058
48		790	790	29,499	28,709
49		790	790	-7,173	-7,963
50		4,153	4,153	13,782	9,629
Total	56,004	46,086	102,090	673,699	571,609
				EIRR =	0.2043610316

Table L.2.7-(4) ECONOMIC INTERNAL RATE OF RETURN (LEFT MARGIN-1)

Unit: Col$ x 1000

Year	Construction Cost	O/M Cost	Project Cost	Incremental Benefit	Project Return
1	22,750		22,750	10,537	-12,213
2	33,457		33,457	55,589	22,132
3	41,183		41,183	97,501	56,318
4	72,905		72,905	35,723	-37,182
5	79,659	1,996	81,655	66,114	-15,541
6		3,525	3,525	97,501	93,976
7		3,525	3,525	35,723	32,198
8		3,525	3,525	66,114	62,589
9		3,525	3,525	97,501	93,976
10		3,525	3,525	35,723	32,198
11		3,525	3,525	66,114	62,589
12		3,525	3,525	97,501	93,976
13		3,525	3,525	31,245	27,720
14		3,525	3,525	66,114	62,589
15		3,525	3,525	97,501	93,976
16		3,525	3,525	35,723	32,198
17		3,525	3,525	66,114	62,589
18		3,525	3,525	97,501	93,976
19		3,525	3,525	35,723	32,198
20		18,534	18,534	66,114	47,580
21		3,525	3,525	97,501	93,976
22		3,525	3,525	35,723	32,198
23		3,525	3,525	66,114	62,589
24		3,525	3,525	97,501	93,976
25		3,525	3,525	31,245	27,720
26		3,525	3,525	66,114	62,589
27		3,525	3,525	97,501	93,976
28		3,525	3,525	35,723	32,198
29		3,525	3,525	66,114	62,589
30		3,525	3,525	97,501	93,976
31		3,525	3,525	35,723	32,198
32		3,525	3,525	66,114	62,589
33		3,525	3,525	97,501	93,976
34		3,525	3,525	35,723	32,198
35		18,534	18,534	66,114	47,580
36		3,525	3,525	97,501	93,976
37		3,525	3,525	31,245	27,720
38		3,525	3,525	66,114	62,589
39		3,525	3,525	97,501	93,976
40		3,525	3,525	35,723	32,198
41		3,525	3,525	66,114	62,589
42		3,525	3,525	97,501	93,976
43		3,525	3,525	35,723	32,198
44		3,525	3,525	66,114	62,589
45		3,525	3,525	97,501	93,976
46		3,525	3,525	35,723	32,198
47		3,525	3,525	66,114	62,589
48		3,525	3,525	97,501	93,976
49		3,525	3,525	31,245	27,720
50		18,534	18,534	66,114	47,580
Total	249,954	205,648	455,602	3,237,613	2,782,011
				EIRR =	0.1049357392

Table L.2.7-(5) ECONOMIC INTERNAL RATE OF RETURN (SALENTO)

Unit: Col$ x 1000

Year	Construction Cost	O/M Cost	Project Cost	Incremental Benefit	Project Return
1	44,860		44,860	-28,926	-73,786
2	65,974		65,974	9,870	-56,104
3	81,206		81,206	90,238	9,032
4	143,759		143,759	126,714	-17,045
5	157,075	3,936	161,011	70,342	-90,669
6		6,950	6,950	80,593	73,643
7		6,950	6,950	60,767	53,817
8		6,950	6,950	149,322	142,372
9		6,950	6,950	93,161	86,211
10		6,950	6,950	51,026	44,076
11		6,950	6,950	82,782	75,832
12		6,950	6,950	172,094	165,144
13		6,950	6,950	100,068	93,118
14		6,950	6,950	76,614	69,664
15		6,950	6,950	105,167	98,217
16		6,950	6,950	141,643	134,693
17		6,950	6,950	85,270	78,320
18		6,950	6,950	93,458	86,508
19		6,950	6,950	71,689	64,739
20		36,546	36,546	158,276	121,730
21		6,950	6,950	102,566	95,616
22		6,950	6,950	59,980	53,030
23		6,950	6,950	88,322	81,372
24		6,950	6,950	175,121	168,171
25		6,950	6,950	100,068	93,118
26		6,950	6,950	76,614	69,664
27		6,950	6,950	105,167	98,217
28		6,950	6,950	141,643	134,693
29		6,950	6,950	85,270	78,320
30		6,950	6,950	93,458	86,508
31		6,950	6,950	72,139	65,189
32		6,950	6,950	158,276	151,326
33		6,950	6,950	102,115	95,165
34		6,950	6,950	59,980	53,030
35		36,546	36,546	88,322	51,776
36		6,950	6,950	175,121	168,171
37		6,950	6,950	100,068	93,118
38		6,950	6,950	76,614	69,664
39		6,950	6,950	105,167	98,217
40		6,950	6,950	141,643	134,693
41		6,950	6,950	85,721	78,771
42		6,950	6,950	93,458	86,508
43		6,950	6,950	71,689	64,739
44		6,950	6,950	158,276	151,326
45		6,950	6,950	102,115	95,165
46		6,950	6,950	59,980	53,030
47		6,950	6,950	88,322	81,372
48		6,950	6,950	175,121	168,171
49		6,950	6,950	100,068	93,118
50		36,546	36,546	76,614	40,068
Total	492,874	405,474	898,348	4,909,182	4,010,834
				EIRR =	0.2335883185

Table L.2.7-(6) ECONOMIC INTERNAL RATE OF RETURN (PIJAO)

Year	Construction Cost	O/M Cost	Project Cost	Incremental Benefit	Project Return
1	51,935		51,935	-90,885	-142,820
2	76,379		76,379	-20,356	-96,735
3	94,013		94,013	101,575	7,562
4	166,432		166,432	208,279	41,847
5	181,847	4,557	186,404	84,834	-101,570
6		8,047	8,047	82,054	74,007
7		8,047	8,047	83,248	75,201
8		8,047	8,047	219,691	211,644
9		8,047	8,047	98,101	90,054
10		8,047	8,047	63,663	55,616
11		8,047	8,047	101,796	93,749
12		8,047	8,047	234,535	226,488
13		8,047	8,047	116,694	108,647
14		8,047	8,047	78,668	70,621
15		8,047	8,047	109,920	101,873
16		8,047	8,047	216,625	208,578
17		8,047	8,047	93,179	85,132
18		8,047	8,047	89,559	81,512
19		8,047	8,047	89,993	81,946
20		42,310	42,310	225,661	183,351
21		8,047	8,047	110,830	102,783
22		8,047	8,047	69,632	61,585
23		8,047	8,047	99,029	90,982
24		8,047	8,047	236,552	228,505
25		8,047	8,047	116,694	108,647
26		8,047	8,047	78,668	70,621
27		8,047	8,047	109,920	101,873
28		8,047	8,047	216,625	208,578
29		8,047	8,047	93,179	85,132
30		8,047	8,047	89,559	81,512
31		8,047	8,047	96,753	88,706
32		8,047	8,047	225,661	217,614
33		8,047	8,047	104,071	96,024
34		8,047	8,047	69,632	61,585
35		42,310	42,310	99,029	56,719
36		8,047	8,047	236,552	228,505
37		8,047	8,047	116,694	108,647
38		8,047	8,047	78,668	70,621
39		8,047	8,047	109,920	101,873
40		8,047	8,047	216,625	208,578
41		8,047	8,047	99,939	91,892
42		8,047	8,047	89,559	81,512
43		8,047	8,047	89,993	81,946
44		8,047	8,047	225,661	217,614
45		8,047	8,047	104,071	96,024
46		8,047	8,047	69,632	61,585
47		8,047	8,047	99,029	90,982
48		8,047	8,047	236,552	228,505
49		8,047	8,047	116,694	108,647
50		42,310	42,310	78,668	36,358
Total	570,606	469,461	1,040,067	5,970,930	4,930,863
				EIRR =	0.2117096424

Table L.2.7-(7) ECONOMIC INTERNAL RATE OF RETURN (GENOVA)

Unit: Col$ x 1000

Year	Construction Cost	O/M Cost	Project Cost	Incremental Benefit	Project Return
1	47,896		47,896	-98,068	-145,964
2	70,439		70,439	-16,016	-86,455
3	86,702		86,702	88,569	1,867
4	153,490		153,490	171,477	17,987
5	166,684	4,202	170,886	69,409	-101,477
6		7,421	7,421	73,837	66,416
7		7,421	7,421	65,322	57,901
8		7,421	7,421	183,968	176,547
9		7,421	7,421	84,452	77,031
10		7,421	7,421	50,590	43,169
11		7,421	7,421	82,149	74,728
12		7,421	7,421	197,403	189,982
13		7,421	7,421	70,850	63,429
14		7,421	7,421	61,474	54,053
15		7,421	7,421	90,176	82,755
16		7,421	7,421	173,084	165,663
17		7,421	7,421	71,016	63,595
18		7,421	7,421	74,909	67,488
19		7,421	7,421	65,858	58,437
20		39,019	39,019	183,968	144,949
21		7,421	7,421	89,859	82,438
22		7,421	7,421	50,590	43,169
23		7,421	7,421	76,741	69,320
24		7,421	7,421	197,403	189,982
25		7,421	7,421	70,850	63,429
26		7,421	7,421	61,474	54,053
27		7,421	7,421	90,176	82,755
28		7,421	7,421	173,084	165,663
29		7,421	7,421	71,016	63,595
30		7,421	7,421	74,909	67,488
31		7,421	7,421	71,266	63,845
32		7,421	7,421	183,968	176,547
33		7,421	7,421	84,452	77,031
34		7,421	7,421	50,590	43,169
35		39,019	39,019	76,741	37,722
36		7,421	7,421	197,403	189,982
37		7,421	7,421	70,850	63,429
38		7,421	7,421	61,474	54,053
39		7,421	7,421	90,176	82,755
40		7,421	7,421	173,084	165,663
41		7,421	7,421	76,424	69,003
42		7,421	7,421	74,909	67,488
43		7,421	7,421	65,858	58,437
44		7,421	7,421	183,968	176,547
45		7,421	7,421	84,452	77,031
46		7,421	7,421	50,590	43,169
47		7,421	7,421	76,741	69,320
48		7,421	7,421	197,403	189,982
49		7,421	7,421	70,850	63,429
50		39,019	39,019	61,474	22,455
Total	525,211	432,941	958,152	4,703,199	3,745,047
				EIRR =	0.1787431522

Table L.2.8-(1) SENSITIVITY ANALYSIS
CASE 1: Construction cost increased by 15%

Unit: Col$ x 1000

Year	Construction Cost	O/M Cost	Project Cost	Incremental Benefit	Project Return
1	657,530		657,530	-973,540	-1,631,070
2	966,570		966,570	-251,440	-1,218,010
3	1,190,250		1,190,250	518,672	-671,578
4	2,106,753		2,106,753	1,261,379	-845,374
5	2,302,968	50,160	2,353,128	661,279	-1,691,849
6		88,580	88,580	692,738	604,158
7		88,580	88,580	870,656	782,076
8		88,580	88,580	1,702,267	1,613,687
9		88,580	88,580	962,923	874,343
10		88,580	88,580	826,722	738,142
11		88,580	88,580	642,848	554,268
12		88,580	88,580	1,626,864	1,538,284
13		88,580	88,580	1,065,579	976,999
14		88,580	88,580	1,034,464	945,884
15		88,580	88,580	1,299,503	1,210,923
16		88,580	88,580	1,997,779	1,909,199
17		88,580	88,580	1,290,748	1,202,168
18		88,580	88,580	1,166,811	1,078,231
19		88,580	88,580	1,265,662	1,177,082
20		465,760	465,760	1,996,038	1,530,278
21		88,580	88,580	853,564	764,984
22		88,580	88,580	899,536	810,956
23		88,580	88,580	1,042,341	953,761
24		88,580	88,580	1,791,486	1,702,906
25		88,580	88,580	1,105,946	1,017,366
26		88,580	88,580	1,022,342	933,762
27		88,580	88,580	1,168,900	1,080,320
28		88,580	88,580	1,827,010	1,738,430
29		88,580	88,580	1,161,097	1,072,517
30		88,580	88,580	1,039,679	951,099
31		88,580	88,580	771,851	683,271
32		88,580	88,580	1,702,693	1,614,113
33		88,580	88,580	1,067,234	978,654
34		88,580	88,580	988,464	899,884
35		465,760	465,760	1,204,156	738,396
36		88,580	88,580	1,998,646	1,910,066
37		88,580	88,580	1,257,232	1,168,652
38		88,580	88,580	1,172,389	1,083,809
39		88,580	88,580	1,334,676	1,246,096
40		88,580	88,580	1,999,890	1,911,310
41		88,580	88,580	873,985	785,405
42		88,580	88,580	915,432	826,852
43		88,580	88,580	1,092,212	1,003,632
44		88,580	88,580	1,855,826	1,767,246
45		88,580	88,580	1,215,456	1,126,876
46		88,580	88,580	1,130,162	1,041,582
47		88,580	88,580	1,258,919	1,170,339
48		88,580	88,580	1,955,034	1,866,454
49		88,580	88,580	1,209,601	1,121,021
50		465,760	465,760	1,095,039	629,279
Total	7,224,071	5,167,800	12,391,871	57,668,750	45,276,879

EIRR = 0.1299360958

Table L.2.8-(2) SENSITIVITY ANALYSIS
CASE 2: Construction cost decreased by 15%

Unit: Col$ x 1000

Year	Construction Cost	O/M Cost	Project Cost	Incremental Benefit	Project Return
1	486,000		486,000	-973,540	-1,459,540
2	714,422		714,422	-251,440	-965,862
3	879,750		879,750	518,672	-361,078
4	1,557,165		1,557,165	1,261,379	-295,786
5	1,702,194	50,160	1,752,354	661,279	-1,091,075
6		88,580	88,580	692,738	604,158
7		88,580	88,580	870,656	782,076
8		88,580	88,580	1,702,267	1,613,687
9		88,580	88,580	962,923	874,343
10		88,580	88,580	826,722	738,142
11		88,580	88,580	642,848	554,268
12		88,580	88,580	1,626,864	1,538,284
13		88,580	88,580	1,065,579	976,999
14		88,580	88,580	1,034,464	945,884
15		88,580	88,580	1,299,503	1,210,923
16		88,580	88,580	1,997,779	1,909,199
17		88,580	88,580	1,290,748	1,202,168
18		88,580	88,580	1,166,811	1,078,231
19		88,580	88,580	1,265,662	1,177,082
20		465,760	465,760	1,996,038	1,530,278
21		88,580	88,580	853,564	764,984
22		88,580	88,580	899,536	810,956
23		88,580	88,580	1,042,341	953,761
24		88,580	88,580	1,791,486	1,702,906
25		88,580	88,580	1,105,946	1,017,366
26		88,580	88,580	1,022,342	933,762
27		88,580	88,580	1,168,900	1,080,320
28		88,580	88,580	1,827,010	1,738,430
29		88,580	88,580	1,161,097	1,072,517
30		88,580	88,580	1,039,679	951,099
31		88,580	88,580	771,851	683,271
32		88,580	88,580	1,702,693	1,614,113
33		88,580	88,580	1,067,234	978,654
34		88,580	88,580	988,464	899,884
35		465,760	465,760	1,204,156	738,396
36		88,580	88,580	1,998,646	1,910,066
37		88,580	88,580	1,257,232	1,168,652
38		88,580	88,580	1,172,389	1,083,809
39		88,580	88,580	1,334,676	1,246,096
40		88,580	88,580	1,999,890	1,911,310
41		88,580	88,580	873,985	785,405
42		88,580	88,580	915,432	826,852
43		88,580	88,580	1,092,212	1,003,632
44		88,580	88,580	1,855,826	1,767,246
45		88,580	88,580	1,215,456	1,126,876
46		88,580	88,580	1,130,162	1,041,582
47		88,580	88,580	1,258,919	1,170,339
48		88,580	88,580	1,955,034	1,866,454
49		88,580	88,580	1,209,601	1,121,021
50		465,760	465,760	1,095,039	629,279
Total	5,339,531	5,167,800	10,507,331	57,668,750	47,161,419
				EIRR =	0.1644851775

Table L.2.8-(3) SENSITIVITY ANALYSIS
CASE 3: Yield or farm-gate price dropped by 15%

Unit: Col$ x 1000

Year	Construction Cost	O/M Cost	Project Cost	Incremental Benefit	Project Return
1	571,765		571,765	-1,119,571	-1,691,336
2	840,496		840,496	-289,156	-1,129,652
3	1,035,000		1,035,000	440,871	-594,129
4	1,831,959		1,831,959	1,072,172	-759,787
5	2,002,581	50,160	2,052,741	562,087	-1,490,654
6		88,580	88,580	588,827	500,247
7		88,580	88,580	740,058	651,478
8		88,580	88,580	1,446,927	1,358,347
9		88,580	88,580	818,485	729,905
10		88,580	88,580	702,714	614,134
11		88,580	88,580	546,421	457,841
12		88,580	88,580	1,382,834	1,294,254
13		88,580	88,580	905,742	817,162
14		88,580	88,580	879,294	790,714
15		88,580	88,580	1,104,578	1,015,998
16		88,580	88,580	1,698,112	1,609,532
17		88,580	88,580	1,097,136	1,008,556
18		88,580	88,580	991,789	903,209
19		88,580	88,580	1,075,813	987,233
20		465,760	465,760	1,696,632	1,230,872
21		88,580	88,580	725,529	636,949
22		88,580	88,580	764,606	676,026
23		88,580	88,580	885,990	797,410
24		88,580	88,580	1,522,763	1,434,183
25		88,580	88,580	940,054	851,474
26		88,580	88,580	868,991	780,411
27		88,580	88,580	993,565	904,985
28		88,580	88,580	1,552,959	1,464,379
29		88,580	88,580	986,932	898,352
30		88,580	88,580	883,727	795,147
31		88,580	88,580	656,073	567,493
32		88,580	88,580	1,447,289	1,358,709
33		88,580	88,580	907,149	818,569
34		88,580	88,580	840,194	751,614
35		465,760	465,760	1,023,533	557,773
36		88,580	88,580	1,698,849	1,610,269
37		88,580	88,580	1,068,647	980,067
38		88,580	88,580	996,531	907,951
39		88,580	88,580	1,134,475	1,045,895
40		88,580	88,580	1,699,907	1,611,327
41		88,580	88,580	742,887	654,307
42		88,580	88,580	778,117	689,537
43		88,580	88,580	928,380	839,800
44		88,580	88,580	1,577,452	1,488,872
45		88,580	88,580	1,033,138	944,558
46		88,580	88,580	960,638	872,058
47		88,580	88,580	1,070,081	981,501
48		88,580	88,580	1,661,779	1,573,199
49		88,580	88,580	1,028,161	939,581
50		465,760	465,760	930,783	465,023
Total	6,281,801	5,167,800	11,449,601	48,650,944	37,201,343

EIRR = 0.1183601675

Table L.2.8-(4) SENSITIVITY ANALYSIS
CASE 3: Yield or farm-gate price raised by 15%

Unit: Col$ x 1000

Year	Construction Cost	O/M Cost	Project Cost	Incremental Benefit	Project Return
1	571,765		571,765	-827,509	-1,399,274
2	840,496		840,496	-213,724	-1,054,220
3	1,035,000		1,035,000	596,473	-438,527
4	1,831,959		1,831,959	1,450,586	-381,373
5	2,002,581	50,160	2,052,741	760,471	-1,292,270
6		88,580	88,580	796,649	708,069
7		88,580	88,580	1,001,254	912,674
8		88,580	88,580	1,957,607	1,869,027
9		88,580	88,580	1,107,361	1,018,781
10		88,580	88,580	950,730	862,150
11		88,580	88,580	739,275	650,695
12		88,580	88,580	1,870,894	1,782,314
13		88,580	88,580	1,225,416	1,136,836
14		88,580	88,580	1,189,634	1,101,054
15		88,580	88,580	1,494,428	1,405,848
16		88,580	88,580	2,297,446	2,208,866
17		88,580	88,580	1,484,360	1,395,780
18		88,580	88,580	1,341,833	1,253,253
19		88,580	88,580	1,455,511	1,366,931
20		465,760	465,760	2,295,444	1,829,684
21		88,580	88,580	981,599	893,019
22		88,580	88,580	1,034,466	945,886
23		88,580	88,580	1,198,692	1,110,112
24		88,580	88,580	2,060,209	1,971,629
25		88,580	88,580	1,271,838	1,183,258
26		88,580	88,580	1,175,693	1,087,113
27		88,580	88,580	1,344,235	1,255,655
28		88,580	88,580	2,101,062	2,012,482
29		88,580	88,580	1,335,262	1,246,682
30		88,580	88,580	1,195,631	1,107,051
31		88,580	88,580	887,629	799,049
32		88,580	88,580	1,958,097	1,869,517
33		88,580	88,580	1,227,319	1,138,739
34		88,580	88,580	1,136,734	1,048,154
35		465,760	465,760	1,384,779	919,019
36		88,580	88,580	2,298,443	2,209,863
37		88,580	88,580	1,445,817	1,357,237
38		88,580	88,580	1,348,247	1,259,667
39		88,580	88,580	1,534,877	1,446,297
40		88,580	88,580	2,299,874	2,211,294
41		88,580	88,580	1,005,083	916,503
42		88,580	88,580	1,052,747	964,167
43		88,580	88,580	1,256,044	1,167,464
44		88,580	88,580	2,134,200	2,045,620
45		88,580	88,580	1,397,774	1,309,194
46		88,580	88,580	1,299,686	1,211,106
47		88,580	88,580	1,447,757	1,359,177
48		88,580	88,580	2,248,289	2,159,709
49		88,580	88,580	1,391,041	1,302,461
50		465,760	465,760	1,259,295	793,535
Total	6,281,801	5,167,800	11,449,601	66,686,557	55,236,956

EIRR = 0.1740910768

Table L.2.8-(5) SENSITIVITY ANALYSIS
CASE 5: Generation of project benefits delayed by 3 years

Unit: Col$ x 1000

Year	Construction Cost	O/M Cost	Project Cost	Incremental Benefit	Project Return
1	571,765		571,765		-571,765
2	840,496		840,496		-840,496
3	1,035,000		1,035,000		-1,035,000
4	1,831,959		1,831,959	-973,540	-2,805,499
5	2,002,581	50,160	2,052,741	-251,440	-2,304,181
6		88,580	88,580	518,672	430,092
7		88,580	88,580	1,261,379	1,172,799
8		88,580	88,580	661,279	572,699
9		88,580	88,580	692,738	604,158
10		88,580	88,580	870,656	782,076
11		88,580	88,580	1,702,267	1,613,687
12		88,580	88,580	962,923	874,343
13		88,580	88,580	826,722	738,142
14		88,580	88,580	642,848	554,268
15		88,580	88,580	1,626,864	1,538,284
16		88,580	88,580	1,065,579	976,999
17		88,580	88,580	1,034,464	945,884
18		88,580	88,580	1,299,503	1,210,923
19		88,580	88,580	1,997,779	1,909,199
20		465,760	465,760	1,290,748	824,988
21		88,580	88,580	1,166,811	1,078,231
22		88,580	88,580	1,265,662	1,177,082
23		88,580	88,580	1,996,038	1,907,458
24		88,580	88,580	853,564	764,984
25		88,580	88,580	899,536	810,956
26		88,580	88,580	1,042,341	953,761
27		88,580	88,580	1,791,486	1,702,906
28		88,580	88,580	1,105,946	1,017,366
29		88,580	88,580	1,022,342	933,762
30		88,580	88,580	1,168,900	1,080,320
31		88,580	88,580	1,827,010	1,738,430
32		88,580	88,580	1,161,097	1,072,517
33		88,580	88,580	1,039,679	951,099
34		88,580	88,580	771,851	683,271
35		465,760	465,760	1,702,693	1,236,933
36		88,580	88,580	1,067,234	978,654
37		88,580	88,580	988,464	899,884
38		88,580	88,580	1,204,156	1,115,576
39		88,580	88,580	1,998,646	1,910,066
40		88,580	88,580	1,257,232	1,168,652
41		88,580	88,580	1,172,389	1,083,809
42		88,580	88,580	1,334,676	1,246,096
43		88,580	88,580	1,999,890	1,911,310
44		88,580	88,580	873,985	785,405
45		88,580	88,580	915,432	826,852
46		88,580	88,580	1,092,212	1,003,632
47		88,580	88,580	1,855,826	1,767,246
48		88,580	88,580	1,215,456	1,126,876
49		88,580	88,580	1,130,162	1,041,582
50		465,760	465,760	1,258,919	793,159
Total	6,281,801	5,167,800	11,449,601	53,409,076	41,959,475

EIRR = 0.1089250199

Table L.2.8-(6) SENSITIVITY ANALYSIS
CASE 6: Generation of project benefits delayed by 2 years

Unit: Col$ x 1000

Year	Construction Cost	O/M Cost	Project Cost	Incremental Benefit	Project Return
1	571,765		571,765		-571,765
2	840,496		840,496		-840,496
3	1,035,000		1,035,000	-973,540	-2,008,540
4	1,831,959		1,831,959	-251,440	-2,083,399
5	2,002,581	50,160	2,052,741	518,672	-1,534,069
6		88,580	88,580	1,261,379	1,172,799
7		88,580	88,580	661,279	572,699
8		88,580	88,580	692,738	604,158
9		88,580	88,580	870,656	782,076
10		88,580	88,580	1,702,267	1,613,687
11		88,580	88,580	962,923	874,343
12		88,580	88,580	826,722	738,142
13		88,580	88,580	642,848	554,268
14		88,580	88,580	1,626,864	1,538,284
15		88,580	88,580	1,065,579	976,999
16		88,580	88,580	1,034,464	945,884
17		88,580	88,580	1,299,503	1,210,923
18		88,580	88,580	1,997,779	1,909,199
19		88,580	88,580	1,290,748	1,202,168
20		465,760	465,760	1,166,811	701,051
21		88,580	88,580	1,265,662	1,177,082
22		88,580	88,580	1,996,038	1,907,458
23		88,580	88,580	853,564	764,984
24		88,580	88,580	899,536	810,956
25		88,580	88,580	1,042,341	953,761
26		88,580	88,580	1,791,486	1,702,906
27		88,580	88,580	1,105,946	1,017,366
28		88,580	88,580	1,022,342	933,762
29		88,580	88,580	1,168,900	1,080,320
30		88,580	88,580	1,827,010	1,738,430
31		88,580	88,580	1,161,097	1,072,517
32		88,580	88,580	1,039,679	951,099
33		88,580	88,580	771,851	683,271
34		88,580	88,580	1,702,693	1,614,113
35		465,760	465,760	1,067,234	601,474
36		88,580	88,580	988,464	899,884
37		88,580	88,580	1,204,156	1,115,576
38		88,580	88,580	1,998,646	1,910,066
39		88,580	88,580	1,257,232	1,168,652
40		88,580	88,580	1,172,389	1,083,809
41		88,580	88,580	1,334,676	1,246,096
42		88,580	88,580	1,999,890	1,911,310
43		88,580	88,580	873,985	785,405
44		88,580	88,580	915,432	826,852
45		88,580	88,580	1,092,212	1,003,632
46		88,580	88,580	1,855,826	1,767,246
47		88,580	88,580	1,215,456	1,126,876
48		88,580	88,580	1,130,162	1,041,582
49		88,580	88,580	1,258,919	1,170,339
50		465,760	465,760	1,955,034	1,489,274
Total	6,281,801	5,167,800	11,449,601	55,364,110	43,914,509

EIRR = 0.1186276536

TABLE L.3.2 AMORTIZATION SCHEDULE OF FOREIGN LOAN

Unit: US$ x 1000

Year	Foreign Loan	Outstanding Amount	Interest Payment	Capital Repayment	Total Payment
1	1,214	1,214	36		36
2	1,498	2,712	81		81
3	1,899	4,611	138		138
4	2,971	7,582	227		227
5	3,659	11,241	337		337
6		11,241	337		337
7		11,241	337		337
8		11,241	337	633	970
9		10,608	318	624	942
10		9,984	300	624	924
11		9,360	281	624	905
12		8,736	262	624	886
13		8,112	243	624	867
14		7,484	225	624	849
15		6,864	206	624	830
16		6,240	187	624	811
17		5,616	168	624	792
18		4,992	150	624	774
19		4,368	131	624	755
20		3,744	112	624	736
21		3,120	94	624	718
22		2,496	75	624	699
23		1,872	56	624	680
24		1,248	37	624	661
25		624	19	624	643
Total	11,241		4,697	11,241	15,938

L.4 Financial Analysis of Model Farmers

Group 1 Present
Large Scale Farmer (30ha)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Coffee								
Improved	2.64	736,900	1,945,416	2.00	5.28	680,000	3,590,400	1,644,984
Platano(Mixed)								
Traditional	2.31	79,700	184,107	1.80	4.16	51,300	213,305	29,198
Vegetable	0.05	118,100	5,905	0.73	0.04	350,000	12,775	6,870
Pasture	21.69	81,829	1,774,871	0.43	9.33	237,014	2,210,558	435,687
Others	2.55	0	0			0	0	0
Total	29.24		3,910,299				6,027,039	2,116,740
								70,558 (Col$/ha)

Group 1 Present
Medium Scale Farmer (15ha)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Coffee								
Improved	1.32	736,900	972,708	2.00	2.64	680,000	1,795,200	822,492
Platano(Mixed)								
Traditional	1.16	79,700	92,452	1.80	2.09	51,300	107,114	14,662
Vegetable	0.04	118,100	4,724	0.73	0.03	350,000	10,220	5,496
Pasture	12.38	81,829	1,013,043	0.43	5.32	237,014	1,261,720	248,677
Others	1.28	0	0			0	0	0
Total	16.18		2,082,927				3,174,255	1,091,328
								72,755 (Col$/ha)

Group 1 Present
Small Scale Farmer (5ha)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Coffee								
Traditional	1.46	355,000	518,300	1.00	1.46	680,000	992,800	474,500
Platano(Mixed)								
Traditional	0.39	79,700	31,083	1.80	0.70	51,300	36,013	4,930
Vegetable	0.03	118,100	3,543	0.73	0.02	350,000	7,665	4,122
Pasture	2.43	81,829	198,844	0.43	1.04	237,014	247,656	48,811
Others	0.43	0	0			0	0	0
Total	4.74		751,770				1,284,134	532,363
								106,473 (Col$/ha)

Group 2 Present
Large Scale Farmer (30ha)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Coffee Improved	5.69	736,900	4,192,961	2.16	12.29	680,000	8,357,472	4,164,511
Platano(Mixed) Improved	2.90	184,800	535,920	7.00	20.30	51,300	1,041,390	505,470
Platano(Single)	2.02	410,900	830,018	15.00	30.30	51,300	1,554,390	724,372
Citrus	0.93	418,800	389,484	19.00	17.67	46,800	826,956	437,472
Other Fruit	0.82	888,600	728,652	8.00	6.56	460,000	3,017,600	2,288,948
Vegetable	0.04	118,100	4,724	0.73	0.03	350,000	10,220	5,496
Cassava	0.95	463,000	439,850	18.00	17.10	55,000	940,500	500,650
Soybean	1.46	247,900	361,934	2.30	3.36	210,000	705,180	343,246
Sorghum	0.76	187,680	142,637	4.20	3.19	101,000	322,392	179,755
Maize	0.39	206,500	80,535	1.90	0.74	150,000	111,150	30,615
Pasture	5.02	190,300	955,306	1.00	5.02	237,014	1,189,810	234,504
Others	6.16	0	0			0	0	0
Total	27.14		8,662,021				18,077,060	9,415,039
								313,835 (Col$/ha)

Group 2 Present
Medium Scale Farmer (15ha)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Coffee Improved	2.84	736,900	2,092,796	2.16	6.13	680,000	4,171,392	2,078,596
Platano(Mixed) Improved	1.45	184,800	267,960	7.00	10.15	51,300	520,695	252,735
Platano(Single)	1.01	410,900	415,009	15.00	15.15	51,300	777,195	362,186
Citrus	0.46	418,800	192,648	19.00	8.74	46,800	409,032	216,384
Other Fruit	0.41	888,600	364,326	8.00	3.28	460,000	1,508,800	1,144,474
Vegetable	0.03	118,100	3,543	0.73	0.02	350,000	7,665	4,122
Cassava	0.47	463,000	217,610	18.00	8.46	55,000	465,300	247,690
Soybean	0.73	247,900	180,967	2.30	1.68	210,000	352,590	171,623
Sorghum	0.38	187,680	71,318	4.20	1.60	101,000	161,196	89,878
Maize	0.20	206,500	41,300	1.90	0.38	150,000	57,000	15,700
Pasture	2.51	190,300	477,653	1.00	2.51	237,014	594,905	117,252
Others	3.08	0	0			0	0	0
Total	14		4,325,130				9,025,770	4,700,640
								156,688 (Col$/ha)

Group 2 Present
Small Scale Farmer (5ha)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Coffee Traditional	1.86	415,000	771,900	1.13	2.10	680,000	1,429,224	657,324
Platano(Mixed) Traditional	1.86	79,700	148,242	2.60	4.84	51,300	248,087	99,845
Vegetable	0.02	118,100	2,362	0.73	0.01	350,000	5,110	2,748
Pasture	1.46	190,300	277,838	1.00	1.46	237,014	346,040	68,202
Others	1.03	0	0	0.00	0.00	0	0	0
Total	6.23		1,200,342				2,028,461	828,119
								165,624 (Col$/ha)

Group 3 Present
Large Scale Farmer (30ha)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Vegetable	0.04	118,100	4,724	0.73	0.03	350,000	10,220	5,496
Soybean	10.03	247,900	2,486,437	2.30	23.07	210,000	4,844,490	2,358,053
Sorghum	6.94	187,680	1,302,499	4.20	29.15	101,000	2,943,948	1,641,449
Pasture	11.88	175,076	2,079,903	0.92	10.93	237,014	2,590,468	510,565
Others	3.30	0	0			0	0	0
Total	32.19		5,873,563				10,389,126	4,515,563
								150,519 (Col$/ha)

Group 4
Large Scale Farmer (30ha)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Coffee								
Improved	9.90	736,900	7,295,310	1.62	16.07	680,000	10,928,280	3,632,970
Platano(Mixed)								
Improved	2.71	184,800	500,808	4.00	10.84	51,300	556,092	55,284
Vegetable	0.04	118,100	4,724	0.60	0.02	350,000	8,400	3,676
Pasture	11.43	57,090	652,539	0.30	3.43	237,014	812,721	160,182
Others	4.89	0	0			0	0	0
Total	28.97		8,453,381				12,305,493	3,852,112
								128,404 (Col$/ha)

Group 4
Medium Scale Farmer (15ha)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Coffee								
Traditional	4.94	355,000	1,753,700	0.76	3.74	680,000	2,541,795	788,095
Platano(Mixed)								
Traditional	1.35	79,700	107,595	1.60	2.16	51,300	110,808	3,213
Vegetable	0.03	118,100	3,543	0.60	0.02	350,000	6,300	2,757
Pasture	5.71	57,090	325,984	0.30	1.71	237,014	406,005	80,021
Others	2.45	0	0			0	0	0
Total	14.48		2,190,822				3,064,908	874,086
								58,272 (Col$/ha)

Group 4
Small Scale Farmer (5ha)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Coffee								
Traditional	1.65	355,000	585,750	0.76	1.25	680,000	848,980	263,230
Platano(Mixed)								
Traditional	0.45	79,700	35,865	1.60	0.72	51,300	36,936	1,071
Vegetable	0.02	118,100	2,362	0.60	0.01	350,000	4,200	1,838
Pasture	1.89	57,090	107,900	0.30	0.57	237,014	134,387	26,487
Others	0.82	0	0			0	0	0
Total	4.83		731,877				1,024,503	292,626
								58,525 (Col$/ha)

Group 1 Plan
Large Scale Farmer (30ha)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Coffee								
Improved	2.64	736,900	1,945,416	2.00	5.28	680,000	3,590,400	1,644,984
Platano(Mixed)								
Traditional	2.31	79,700	184,107	1.80	4.16	51,300	213,305	29,198
Vegetable	0.04	118,100	4,724	1.20	0.05	350,000	16,800	12,076
Tomato	0.60	1,011,500	606,900	43.00	25.80	80,000	2,064,000	1,457,100
Onion	0.18	918,400	165,312	15.00	2.70	96,000	259,200	93,888
Blackberry	2.92	1,002,700	2,927,884	16.70	48.76	140,000	6,826,960	3,899,076
Lulo	2.92	871,700	2,545,364	10.00	29.20	170,000	4,964,000	2,418,636
Tree Tomato	2.92	754,300	2,202,556	25.00	73.00	70,000	5,110,000	2,907,444
Pasture	9.33	190,300	1,775,499	1.00	9.33	237,014	2,211,341	435,842
Others	4.39	0	0			0	0	0
Total	28.25		12,357,762				25,256,006	12,898,244
								429,941 (Col$/ha)

Group 1 Plan
Medium Scale Farmer (15ha)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Coffee Improved	1.32	736,900	972,708	2.00	2.64	680,000	1,795,200	822,492
Platano(Mixed) Traditional	1.16	79,700	92,452	2.16	2.51	51,300	128,537	36,085
Vegetable	0.03	118,100	3,543	1.20	0.04	350,000	12,600	9,057
Tomato	0.60	1,011,500	606,900	43.00	25.80	80,000	2,064,000	1,457,100
Onion	0.18	918,400	165,312	15.00	2.70	96,000	259,200	93,888
Blackberry	1.62	1,002,700	1,624,374	16.70	27.05	140,000	3,787,560	2,163,186
Lulo	1.62	871,700	1,412,154	10.00	16.20	170,000	2,754,000	1,341,846
Tree Tomato	1.62	754,300	1,221,966	25.00	40.50	70,000	2,835,000	1,613,034
Pasture	5.32	190,300	1,012,396	1.00	5.32	237,014	1,260,914	248,518
Others	2.31	0	0			0	0	0
Total	15.78		7,111,805				14,897,012	7,785,207
								259,507 (Col$/ha)

Group 1 Plan
Small Scale Farmer (5ha)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Vegetable	0.02	118,100	2,362	1.20	0.02	350,000	8,400	6,038
Tomato	0.60	1,011,500	606,900	43.00	25.80	80,000	2,064,000	1,457,100
Onion	0.18	918,400	165,312	15.00	2.70	96,000	259,200	93,888
Blackberry	0.63	1,002,700	631,701	16.70	10.52	140,000	1,472,940	841,239
Lulo	0.63	871,700	549,171	10.00	6.30	170,000	1,071,000	521,829
Tree Tomato	0.63	754,300	475,209	25.00	15.75	70,000	1,102,500	627,291
Pasture	1.04	190,300	197,912	1.00	1.04	237,014	246,495	48,583
Others	0.84	0	0			0	0	0
Total	4.57		2,628,567				6,224,535	3,595,968
								119,866 (Col$/ha)

Group 2 Plan
Large Scale Farmer (30ha)

(Unit : Col.$)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Coffee								
Improved	5.69	736,900	4,192,961	2.16	12.29	680,000	8,357,472	4,164,511
Platano(Mixed)								
Improved	2.90	184,800	535,920	8.40	24.36	51,300	1,249,668	713,748
Platano(Single)	2.02	410,900	830,018	15.00	30.30	51,300	1,554,390	724,372
Vegetable	0.04	118,100	4,724	1.20	0.05	350,000	16,800	12,076
Cassava	0.95	463,000	439,850	20.00	19.00	55,000	1,045,000	605,150
Soybean	1.46	247,900	361,934	2.50	3.65	210,000	766,500	404,566
Solghum	0.76	187,680	142,637	4.50	3.42	101,000	345,420	202,783
Maize	0.39	206,500	80,535	3.00	1.17	150,000	175,500	94,965
Kidnybean	0.41	118,100	48,421	1.20	0.49	350,000	172,200	123,779
Citrus	0.93	418,800	389,484	24.00	22.32	46,800	1,044,576	655,092
Other Fruit	0.82	888,600	728,652	8.00	6.56	460,000	3,017,600	2,288,948
Pasture	5.02	190,300	955,306	1.00	5.02	237,014	1,189,810	234,504
Others	6.16	0	0			0	0	0
Total	27.55		8,710,442				18,934,936	10,224,494
								340,816 (Col$/ha)

Group 2 Plan
Medium Scale Farmer (15ha)

(Unit : Col.$)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Coffee Improved	2.84	736,900	2,092,796	2.16	6.13	680,000	4,171,392	2,078,596
Platano(Mixed) Improved	1.45	184,800	267,960	8.40	12.18	51,300	624,834	356,874
Platano(Single)	1.01	410,900	415,009	15.00	15.15	51,300	777,195	362,186
Vegetable	0.03	118,100	3,543	1.20	0.04	350,000	12,600	9,057
Cassava	0.47	463,000	217,610	20.00	9.40	55,000	517,000	299,390
Soybean	0.73	247,900	180,967	2.50	1.83	210,000	383,250	202,283
Solghum	0.38	187,680	71,318	4.50	1.71	101,000	172,710	101,392
Maize	0.20	206,500	41,300	3.00	0.60	150,000	90,000	48,700
Kidnybean	0.21	118,100	24,801	1.20	0.25	350,000	88,200	63,399
Citrus	0.46	418,800	192,648	24.00	11.04	46,800	516,672	324,024
Other Fruit	0.41	888,600	364,326	8	3.28	460,000	1,508,800	1,144,474
Pasture	2.51	190,300	477,653	1.00	2.51	237,014	594,905	117,252
Others	3.08	0	0			0	0	0
Total	13.78		4,349,931				9,457,558	5,107,627
								170,254 (Col$/ha)

Group 2 Plan
Small Scale Farmer (5ha)

(Unit : Col.$)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Vegetable	0.02	118,100	2,362	1.20	0.02	350,000	8,400	6,038
Citrus	1.46	418,800	611,448	24.00	35.04	46,800	1,639,872	1,028,424
Pasture	1.46	190,300	277,838	1.00	1.46	237,014	346,040	68,202
Others	1.43	0	0			0	0	0
Total	4.37		891,648				1,994,312	1,102,664
								36,755 (Col$/ha)

Group 3 Plan
Large Scale Farmer (30ha)

(Unit : Col.$)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Vegetable	0.04	118,100	4,724	1.20	0.05	350,000	16,800	12,076
Soybean	19.34	247,900	4,794,386	2.50	48.35	210,000	10,153,500	5,359,114
Sorghum	9.66	187,680	1,812,989	4.50	43.47	101,000	4,390,470	2,577,481
Pasture	10.87	190,300	2,068,561	1.00	10.87	237,014	2,576,342	507,781
Others	3.30	0	0			0	0	0
Total	43.21		8,680,660				17,137,112	8,456,452
								281,882 (Col$/ha)

Group 4 Plan
Large Scale Farmer (30ha)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Coffee								
Improved	9.90	736,900	7,295,310	2.00	19.80	680,000	13,464,000	6,168,690
Platano(Mixed)								
Improved	2.71	184,800	500,808	4.50	12.20	51,300	625,604	124,796
Vegetable	0.04	118,100	4,724	1.20	0.05	350,000	16,800	12,076
Blackberry	0.89	1,002,700	892,403	16.70	14.86	140,000	2,080,820	1,188,417
Lulo	0.89	871,700	775,813	10.00	8.90	170,000	1,513,000	737,187
Tree Tomato	0.89	754,300	671,327	25.00	22.25	70,000	1,557,500	886,173
Pasture	7.42	190,300	1,412,026	1.00	7.42	237,014	1,758,644	346,618
Others	5.78	0	0			0	0	0
Total	28.52		11,552,411				21,016,367	9,463,956
								315,465 (Col$/ha)

Group 4 Plan
Medium Scale Farmer (15ha)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Vegetable	0.03	118,100	3,543	1.20	0.04	350,000	12,600	9,057
Blackberry	1.68	1,002,700	1,684,536	16.70	28.06	140,000	3,927,840	2,243,304
Lulo	1.68	871,700	1,464,456	10.00	16.80	170,000	2,856,000	1,391,544
Tree Tomato	1.68	754,300	1,267,224	25.00	42.00	70,000	2,940,000	1,672,776
Pasture	3.71	190,300	706,013	1.00	3.71	237,014	879,322	173,309
Others	4.13	0	0			0	0	0
Total	12.91		5,125,772				10,615,762	5,489,990
								183,000 (Col$/ha)

Group 4 Plan
Small Scale Farmer (5ha)

	Planted Area(ha)	Production Cost (col$/ha)	Production Cost (col$)	Unit Yield (t/ha)	Total Yield (t)	Farm-Gate Price (col$/t)	Gross Return (col$)	Net Return (col$)
Vegetable	0.02	118,100	2,362	1.20	0.02	350,000	8,400	6,038
Blackberry	0.56	1,002,700	561,512	16.70	9.35	140,000	1,309,280	747,768
Lulo	0.56	871,700	488,152	10.00	5.60	170,000	952,000	463,848
Tree Tomato	0.56	754,300	422,408	25.00	14.00	70,000	980,000	557,592
Pasture	1.23	190,300	234,069	1.00	1.23	237,014	291,527	57,458
Others	1.38	0	0			0	0	0
Total	4.31		1,708,503				3,541,207	1,832,704
								61,090 (Col$/ha)

Table L.3.1 Disbursement Schedule

Table L.3.1(3) Disbursement Schedule of Construction Cost
(Coffee Waste Water Treatment)

Col. $1,000

Description	Year	1th	2th	3th	4th	5th	Total
Detailed Design	F/C	539,120	102,780				641,900
	L/C	33,600	6,400				40,000
	Total	572,720	109,180				681,900
Land Aquisition	F/C						0
	L/C		5,000				5,000
	Total		5,000				5,000
Administration Cost	F/C						0
	L/C	7,620	9,520	10,155	10,155	10,150	47,600
	Total	7,620	9,520	10,155	10,155	10,150	47,600
Farm Road	F/C		214,800	286,400	286,400	286,410	1,074,010
	L/C		127,540	170,060	170,060	170,050	637,710
	Total		342,340	456,460	456,460	456,460	1,711,720
Irrigation Facilities	F/C				443,000	295,360	738,360
	L/C				271,200	180,960	452,160
	Total				714,200	476,320	1,190,520
Agro-Industry	F/C			18,020	13,420		31,440
	L/C			9,270	6,360		15,630
	Total			27,290	19,780		47,070
Research Center	F/C			46,500			46,500
	L/C			15,500			15,500
	Total			62,000			62,000
Coffee Waste Water Treatment Plant	F/C		81,780	109,040	109,030	109,030	408,880
	L/C		50,420	67,240	67,240	67,230	252,130
	Total		132,200	176,280	176,270	176,260	661,010
O/M Equipment	F/C					377,180	377,180
	L/C					0	0
	Total					377,180	377,180
Supervision	F/C		238,710	318,270	318,270	318,270	1,193,520
	L/C		14,880	19,840	19,840	19,830	74,390
	Total		253,590	338,110	338,110	338,100	1,267,910
Sub-Total	F/C	539,120	638,070	778,230	1,170,120	1,386,250	4,511,790
	L/C	41,220	213,760	292,065	544,855	448,220	1,540,120
	Total	580,340	851,830	1,070,295	1,714,975	1,834,470	6,051,910
Physical contingency	F/C	53,420	64,920	78,570	118,630	139,950	455,490
	L/C	5,740	29,750	40,640	75,820	62,360	214,310
	Total	59,160	94,670	119,210	194,450	202,310	669,800
Total	F/C	592,540	702,990	856,800	1,288,750	1,526,200	4,967,280
	L/C	46,960	243,510	332,705	620,675	510,580	1,754,430
	Total	639,500	946,500	1,189,505	1,909,425	2,036,780	6,721,710

Table L.3.1(2) Disbursement Schedule of Construction Cost

(Agricultural Development)

Col.$1,000

Description	Year	1th	2th	3th	4th	5th	Total
Detailed Design	F/C	411,120	102,780				513,900
	L/C	25,600	6,400				32,000
	Total	436,720	109,180				545,900
Land Aquisition	F/C						0
	L/C		5,000				5,000
	Total		5,000				5,000
Administration Cost	F/C						0
	L/C	7,616	7,616	7,616	7,616	7,616	38,080
	Total	7,616	7,616	7,616	7,616	7,616	38,080
Farm Road	F/C		214,802	286,403	286,403	286,403	1,074,010
	L/C		127,542	170,056	170,056	170,056	637,710
	Total		342,344	456,459	456,459	456,459	1,711,720
Irrigation Facilities	F/C				443,000	295,360	738,360
	L/C				271,200	180,960	452,160
	Total				714,200	476,320	1,190,520
Agro-Industry	F/C			18,020	13,420		31,440
	L/C			9,270	6,360		15,630
	Total			27,290	19,780		47,070
Research Center	F/C			46,500			46,500
	L/C			15,500			15,500
	Total			62,000			62,000
O/M Equipment	F/C					377,180	377,180
	L/C					0	0
	Total					377,180	377,180
Supervision	F/C		190,886	254,515	254,515	254,515	954,430
	L/C		11,902	15,869	15,869	15,869	59,510
	Total		202,788	270,384	270,384	270,384	1,013,940
Sub-Total	F/C	411,120	508,468	605,437	997,337	1,213,457	3,735,820
	L/C	33,216	158,460	218,311	471,101	374,501	1,255,590
	Total	444,336	666,928	823,749	1,468,439	1,587,959	4,991,410
Physical contingency	F/C	41,357	51,150	60,905	100,329	122,069	375,810
	L/C	4,626	22,059	30,405	65,612	52,158	174,870
	Total	45,983	73,219	91,310	165,940	174,227	550,680
Total	F/C	452,477	559,618	666,342	1,097,666	1,335,527	4,111,630
	L/C	37,842	180,529	248,716	536,713	426,659	1,430,460
	Total	490,319	740,147	915,058	1,634,379	1,762,186	5,542,090
	F/C						
	L/C						
	Total						

Table L.3.1(1) Disbursement Schedule of Construction Cost

Col. $1,000

Description	Year	1th	2th	3th	4th	5th	Total
Detailed Design	F/C	128,000					128,000
	L/C	8,000					8,000
	Total	136,000					136,000
Administration Cost	F/C		0				0
	L/C		1,904	2,539	2,539	2,539	9,520
	Total		1,904	2,539	2,539	2,539	9,520
Construction of Coffee Waste Water Treatment Plant	F/C		81,776	109,035	109,035	109,035	408,880
	L/C		50,426	67,235	67,235	67,235	252,130
	Total		132,202	176,269	176,269	176,269	661,010
Supervision	F/C		47,818	63,757	63,757	63,757	239,090
	L/C		2,976	3,968	3,968	3,968	14,880
	Total		50,794	67,725	67,725	67,725	253,970
Sub-Total	F/C	128,000	129,594	172,792	172,792	172,792	775,970
	L/C	8,000	55,306	73,741	73,741	73,741	284,530
	Total	136,000	184,900	246,533	246,533	246,533	1,060,500
	F/C						
	L/C						
	Total						
Physical contingency	F/C	13,144	13,307	17,743	17,743	17,743	79,680
	L/C	1,109	7,666	10,222	10,222	10,222	39,440
	Total	14,253	20,973	27,965	27,965	27,965	119,120
Total	F/C	141,144	142,901	190,535	190,535	190,535	855,650
	L/C	9,109	62,972	83,963	83,963	83,963	323,970
	Total	150,253	205,873	274,498	274,498	274,498	1,179,620

ANNEX M : MINUTES OF MEETING

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M.1 MINUTES OF MEETING ON THE INCEPTION REPORT

MINUTES OF MEETING

FOR

THE FEASIBILITY STUDY

ON

THE QUINDIO BASIN INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT

IN

THE REPUBLIC OF COLOMBIA

AGREED BETWEEN

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

AND

CORPORACION AUTONOMA REGIONAL DEL QUINDIO (CRQ)

Armenia, April 2, 1990

Dr. Julian Serna Giraldo
General Director
CRQ

Mr. Masahito Yamanaka
Leader
Study Team, JICA

Mr. Kazuyuki Itoh
Leader
Advisory Team, JICA

In accordance with the Scope of Work for the Feasibility Study on the Quindio Basin Integrated Agricultural Development Project (hereinafter referred to as "the Study"), the Government of Japan dispatched through Japan International Cooperation Agency (JICA) the Study Team headed by Mr. Masahito Yamanaka and the Advisory Team headed by Mr. Kazuyuki Itoh for the implementation of the Study to the Republic of Colombia. At the commencement of the Study, the Study Team presented officially twenty (20) copies of the Inception Report and explained basic concept, methodology and schedule of the Study at the presence of Colombian organization represented by Corporacion Autonoma Regional del Quindio (CRQ) on March 30, 1990. As a result of explanation and exchange of opinions on the Inception Report, the following points were agreed upon by the Colombian side and the Japanese side.

1. The Colombian side agreed upon the contents of the Inception Report which had been prepared in due compliance with the conditions set forth in the Scope of Work.

2. Both sides will collaborate for the efficient implementation of the Study so that the objectives of the Study be attained as described in the Scope of Work.

3. The Inception Report is prepared and some of the other reports/documents will be prepared both in English and Spanish in accordance with the Minutes of Meeting signed on Sept.27,1989. If any discrepancy on interpretation arises between both languages, the English expression shall be employed.

Attachment: List of attendants for the Meeting.

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JSG

Attachment

Attendants for the Meeting

Participants of CRQ

Dr. Julián Serna Giraldo	General Director
Dr. Orlando Jaramillo Jaramillo	General Secretary
Dr. Aureliano Sabogal	Manager, Natural Resources Dept.
Dr. Luis Fernando Maya G.	Manager, Water Sect.
Dr. Miguel Angel Gaviria O.	Manager, Control and Vigilant Sect.
Dr. Ismael Ramirez Guevara	Head of Technical Division Esaquin
Dr. Armando Rodriguez Jaramillo	Land Use and Evaluation
Dr. Arturo Celis Beltran	Translator.Associate Professor of Linguistcs

Participants of the Study Team

Mr. Masahito Yamanaka	Team Leader/General Manager
Mr. Takahisa Isozuka	Deputy Team Leader/Land Improvement and Evaluation
Mr. Tamio Ota	Agro-economy/Institutional Services
Mr. Eizaburo Furutani	Water Quality Improvement
Mr. Yujiro Itakura	Hydrology/Design and Cost Estimation

Participants of the Advisory Committee

Mr. Kazuyuki Itoh	Leader
Mr. Shigemitsu Tsukamoto	Coordinator

JSG

NOMINA DE CONTRAPARTES PARA EL ESTUDIO DE FACTIBILIDAD SOBRE EL PROYECTO DE DESARROLLO AGRICOLA INTEGRADO DE LA CUENCA DEL QUINDIO

Sr. Masahito YAMANAKA	Dr. Aureliano SABOGAL OSPINA
Sr. Takahisa ISOZUKA	Dr. Juan de Jesús CASTILLO V.
	Dr. Alejandro A. ARIAS
Sr. Hatashi MORIYA	Dr. Miguel Angel GAVIRIA
	Dr. Alvaro CEBALLOS
Sr. Tamio OTA	Dra. Ana Luisa LOPEZ
Sr. Michiaki HOSONO	Dr. Armando RODRIGUEZ J.
Sr. Eizaburo FURUTANI	Dr. Luis Fernando MAYA GOMEZ
Sr. Yujiro ITAKURA	Dr. Ismael RAMIREZ G.

M..2 MINUTES OF MEETING ON THE PROGRESS REPORT (1)

MINUTES OF MEETING

ON

THE FEASIBILITY STUDY

ON

THE QUINDIO BASIN INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT

IN THE REPUBLIC OF COLOMBIA

AGREED BETWEEN

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

AND

CORPORACION AUTONOMA REGIONAL DEL QUINDIO (C.R.Q.)

Armenia, May 23,1990

Dr. Julián Serna Giraldo
General Director
C.R.Q.

Mr. Takahisa Isozuka
Deputy Team Leader,
Study Team, JICA

In accordance with the Scope of Work for the Feasibility Study on the Quindio Basin Integrated Agricultural Development Project signed by the Governments of the Republic of Colombia and Japan, the Japanese Study Team headed by Mr. Masahito Yamanaka has conducted the Phase I field work of the Study following the schedule stipulated in the Inception Report.

At the final stage of the Phase I field work for the Study, the Study Team officially submitted 20 copies of the Progress Report (1) in both English and Spanish to the Government of the Republic of Colombia represented by Corporación Autonoma Regional del Quindio (C.R.Q.).

After the submission of the Progress Report (1), an explanation on it was made by the Deputy Team Leader of the Study Team with an emphasis laid on the basic development concepts. After comments and observation were presented by the Colombian side on the Report and an exchange of opinions was made between both sides, C.R.Q. and the Study Team have agreed upon as follows:

1. The Government of the Republic of Colombia, represented by C.R.Q., expressed that the Progress Report (1) submitted by the Study Team has been prepared in compliance with the methodology set forth in the Inception Report.

2. The basic development concepts presented in the said Report have been prepared as a result of the diagnosis and analysis of the prevailing potentials and constraints of the study area, and they are acceptable to the Colombian side accordingly.

3. The Colombian side promised that, after they will have analyzed the Progress Report in detail and if there will be some additional comments and observation on it, they will send them to the headquarters of the Study Team in Japan no later than 15 days from the date on which this minutes is signed.

4. Based on the above-mentioned understanding, the formulation of the basic development plan to be made in the course of the Phase I home office work would be made in line with the basic development concepts presented in the Progress Report (1) and agreed upon by both concerned parties.

APPENDIX: PARTICIPANTS OF THE MEETING

PARTICIPANTS OF THE COLOMBIAN SIDE

Dr. Julián Serna Giraldo	General Director, C.R.Q.
Dr. Aureliano Sabogal	Manager, Natural Resources Div., C.R.Q.
Dr. Luis Fernando Maya G.	Manager, Water Sect., C.R.Q.
Dr. Juan de Jesús Castillo V.	Planning Div., Univ. de Quindío
Dr. Alvaro Ceballos	Private Agronomist
Dr. Fransisco Lagos R.	Agronomist, Comité Departamental de Cafeteros
Dra. Ana Luisa Lopez	Economist, Univ. de la Gran Colombia
Dr. Armando Rodoriguez J.	Private Soil Engineer
Dr. Ismael Ramirez G.	Sanitary Engineer, Empresa Sanitaria de Quindío S.A.
Dr. Fernan Sanchez	Laboratory Engineer, C.R.Q.

PARTICIPANTS OF THE JAPANESE STUDY TEAM

Ing. Takahisa Isozuka	Deputy Team Leader, Land Improvement and Project Evaluation
Ing. Hatashi Moriya	Agriculture and Cropping
Lic. Tamio Ota	Agroeconomy and Institutional Services
Dr. Michiaki Hosono	Soils and Land Use
Ing. Eizaburo Furutani	Water Quality Improvement
Ing. Yujiro Itakura	Hydrology/ Disign and Estimation of Cost

Member of the Study Team

ASSIGNMENT	NAME
Team Leader General Coordination	Mr. Masahito Yamanaka
Sub-Team Leader Land Improvement & Project Evaluation	Mr. Takahisa Isozuka
Agricultural Technology & Crop Production	Mr. Hatashi Moriya
Agro-Economy & Institution	Mr. Tamio Ota
Soil & Land Use	Dr. Michiaki Hosono
Water Quality Improvement	Mr. Eizaburo Furutani
Hydrology/ Facilities Design & Cost Estimation	Mr. Yujiro Itakura

List of CRQ Principals and Counterpart Personnel

Position	NAME
Director General	Dr. Julian Serna
Secretary General	Dr. Orlando Jaramillo
Project Coordinator	Dr. Aureliano Sabogal
Marine Biologist	Dr. Luis Fernando Haya
Agronomist	Dr. Miguel Angel Gaviria
Chemist	Dr. Fernando Sánchez
Sanitary Engineer	Dr. Ismael Ramírez
Pedologist	Dr. Armando Rodríguez
Economist	Dr. Juan de Jesús Castillo
Economist	Dr. Alejandro Arias
Economist	Dra.Ana Luisa Lopez
Agronomist	Dr. Francisco Lagos

M.3 MINUTES OF MEETING ON THE INTERIM REPORT

MINUTES OF MEETING

FOR

THE FEASIBILITY STUDY

ON

THE QUINDIO BASIN INTEGRATED

AGRICULTURAL DEVELOPMENT PROJECT

AGREED UPON BETWEEN

JAPAN INTERNACIONAL COOPERATION AGENCY (JICA)

AND

CORPORACION AUTONOMA REGIONAL DEL QUINDIO (CRQ)

Armenia, August 10, 1990

Dr. Julian Serna Giraldo
General Director
C.R.Q.

Mr. Masahito Yamanaka
Leader,
Study Team, JICA

伊藤一幸

Mr. Kazuyuki Itoh
Leader
Advisory Team, JICA

The phase I work of the Feasibility Study on the Quindio Basin Integrated Agricultural Development Project (hereinafter referred to as "the Study") was conducted from March to July, 1990 and the result of the Study has been summed up in the Interim Report.

On August 9, 1990, the Study Team headed by Mr. Masahito Yamanaka submitted to the Government of the Republic of Colombia represented by C.R.Q. twenty (20) copies of the Interim Report, both English and Spanish, and explained its contents with focus laid on the development strategies and basic plans of the Project. Subsequently, an exchange of opinions was made between the Colombian side and the Study Team and both parties entered into agreements as given below:

1. The Interim Report was prepared in due compliance with the work methodology and program set forth in the Inception Report.

2. The development strategies and basic plans included in the Interim Report are formulated in due consideration of the physical and socio-economic situations of the Study Area as well as the Department of Quindio and are acceptable to the Colombian side.

3. The phase II work of the Study should be conducted in line with the said development strategies and basic plans as well as in close collaboration between the Study Team and counterpart personnel so that the objectives stipulated in the Scope of Work for the Study may be attained.

Taking opportunity of the meeting for the explanation on the Interim Report, the Colombian side strongly requested the Study Team to implement, in addition to the laboratory tests, the field test by means of installation of a few model plants for proposed coffee waste water treatment system in order to verify the effectiveness of the system in the actual-size level within the the scope of the Study, and the Study Team promised that they would transmit this request to the concerned organization of the Government of Japan.

ANNEX: PARTICIPANTS OF THE MEETING

C. R. Q.

Dr.	JULIAN SERNA GIRALDO	General Director, C.R.Q.
Dr.	AURELIANO SABOGAL OSPINA	Manager, Natural Resources Div. C.R.Q.
Dr.	LUIS FERNANDO MAYA G.	Manager Water Sect, C.R.Q.
Dr.	JUAN DE J. CASTILLO V.	Planning Div. Univ. del Quíndio
Dr.	ALVARO CEBALLOS	Private Agronomist
Dr.	ARMANDO RODRIGUEZ J.	Private Soil Engineer
Dr.	MIGUEL ANGEL GAVIRIA	Agronomist
Dra.	ANA LUISA LOPEZ	Agroeconomist
Dr.	ARTURO CELIS BELTRAN	Translator, Associate Professor

STUDY TEAM OF JICA

Mr.	MASAHITO YAMANAKA	Team Leader
Mr.	TAKAHISA ISOZUKA	Deputy Team Leader
Mr.	HATASHI MORIYA	Agronomist
Mr.	TAMIO OTA	Agro-economist
Dr.	MICHIAKI HOSONO	Soil/Landuse Specialist
Mr.	EIZABURO FURUTANI	Water Quality Specialist
Mr.	YUJIRO ITAKURA	Design Engineer/Hydrologist

ADVISORY TEAM OF JICA

Mr.	KAZUYURI ITOH	Leader
Mr.	TADAO ITOH	Coordinator

M.4 MINUTES OF MEETING ON THE PROGRESS REPORT (2)

MINUTES OF MEETING

FOR

THE FEASIBLITY STUDY

ON

THE QUINDIO BASIN INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT

IN THE REPUBLIC OF COLOMBIA

BETWEEN

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

AND

CORPORACION AUTONOMA REGIONAL DEL QUINDIO

Armenia, October 26 1990

Dr. Julián Serna Giraldo
General Director
C.R.Q.

Mr. Masahito Yamanaka
Team Leader
Study Team, JICA

In accordance with the Scope of Work for the Feasibility Study on the Quindío Basin Integrated Agricultural Development Project signed by the Government of the Republic of Colombia and Japan, the Japanese Study Team headed by Mr. Masahito Yamanaka has conducted Phase II field work of the Study following the schedule stipulated in the Interim Report.

At the final stage of the Phase II field work for the Study, the Study Team officially submitted 20 copies of the Progress Report (II) in both English and Spanish (Summary only) to the Government of the Republic of Colombia represented by Cooporación Autonoma Regional del Quindío (C.R.Q.).

After the submission of the Progress Report (II), an explanation on it was made by the Team Leader of the Study Team with an emphasis laid on the basic development strategy and plan. After comments and observation were presented by the Colombian side on the Report and an exchange of opinions was made between both sides, C.R.Q. and the Study Team have agreed upon as follows:

1. The Government of the Republic of Colombia, represented by C.R.Q., expressed that Progress Report (II) submitted by the Study Team has been prepared in compliance with the methodology set forth in the Interim Report.

2. The development strategy and plan presented in the said Report have been prepared as a result of the diagnosis and analysis of the prevailing potential and constraints of the Study Area, and are acceptable to the Colombian side accordingly.

3. The Colombian side promised that, after they have analyzed the Report in detail and if there will be some additional comments and observation on it, they will send them to the headquqrters of the Study Team in Japan no later than 15 days from the date on which this minutes is signed.

4. Based on the above-mentioned understanding, the formulation of the integrated development plan to be made in the course of the Phase II home office work shall be made in line with the development strategy and plan presented in the Progress Report (II) and agreed upon by both concerned parties.

APPENDIX : PARTICIPANTS OF THE MEETING

PARTICIPANTS OF THE COLOMBIAN SIDE

Dr. Julián Serna Giraldo	General Director, C.R.Q.
Dr. Aureliano Sabogal Ospina	Manager, Natural Resources Div., C.R.Q.
Dr. Luis Fernando Maya Gomez	Manager, Water Sect., C.R.Q.
Dr. Miguel Angel Gaviria	Manager, Control and supervision, C.R.Q.
Dr. Juan de Jesús Castillo V.	Planning Div., Univ. de Quindío
Dr. Alvaro Ceballos	Private Agronomist
Dra. Ana Luisa Lopez	Economist, Univ. de la Gran Colombia
Dr. Armando Rodoriguez J.	Private Soil Engineer
Dra. Alba Lucero Ordóñez Arias	Civil Engineer
Dr. Fernando Sanchez	Laboratory Engineer, C.R.Q.

PARTICIPANTS OF THE JAPANESE STUDY TEAM

Mr. Mashahito Yamanaka	Team Leader
Mr. Takahisa Isozuka	Sub-Team Leader, Land Improvement and Project Evaluation
Lic. Tamio Ota	Agroeconomy and Institutional Services
Dr. Michiaki Hosono	Soil & Land Use
Mr. Eizaburo Furutani	Water Quality Improvement
Mr. Yujiro Itakura	Hydrology / Design and Estimation of Cost

M.5 MINUTES OF MEETING ON THE INSTALLATION OF MODEL PLANTS FOR THE PROPOSED COFFEE WASTE WATER TREATMENT

MINUTES OF MEETING
FOR
THE FEASIBILITY STUDY
ON
THE QUINDIO BASIN INTEGRATED AGRICULTURAL
DEVELOPMENT PROJECT
IN
THE REPUBLIC OF COLOMBIA

BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
AND
CORPORACION AUTONOMA REGIONAL DEL QUINDIO (CRQ)

Bogotá, September 27, 1990

Dr. JULIAN SERNA GIRALDO
General Director
CORPORACION AUTONOMA
REGIONAL DEL QUINDIO
(CRQ)

Mr. IKUO GAMO
Resident Representative
Bogotá Office
JAPAN INTERNATIONAL
COOPERATION AGENCY
(JICA)

Dra YOLANDA RAMIREZ
Chief
International Technical
Cooperation Division
NATIONAL PLANNING
DEPARTMENT
(D.N.P.)

At the meeting between the JICA Study Team and the Colombian counterpart held on August 10, 1990, the Colombian side requested the Study Team to implement the field test by means of installation of a few model plants for the proposed coffee waste water treatment system in order to verify the effectiveness of the system at the actual-size level within the scope of the Study.

In response to the request, the Japanese side carefully considered the matter and finally has decided to implement the field test with two model plants.

Accordingly, the study schedule attached to the scope of work for the Study signed by both sides on September 27, 1989, shall be changed as follows:

ITEM	TIME (month in order)
1. Explanation of Draft Final Report.	Early 12th month to End of 13th month
2. Submission of Final Report.	14th month to 18th month

M.6 MINUTES OF MEETING ON THE DRAFT FINAL REPORT

MINUTES OF MEETING

ON

THE DRAFT FINAL REPORT

FOR

THE FEASIBILITY STUDY

ON

THE QUINDIO BASIN

INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT

BETWEEN

LA CORPORACION AUTONOMA REGIONAL DEL QUINDIO (CRQ)

and

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

Armenia, April 12, 1991

DR. JULIAN SERNA GIRALDO
General Director
CRQ

MR. MASAHITO YAMANAKA
Leader
Japanese Study Team
JICA

In accordance with the Scope of the Work for the Feasibility Study on the Quindio Basin Integrated Agricultural Development Project (hereinafter referred to as "the Study"), the Japanese Study Team headed by Mr. Masahito Yamanaka conducted the Study both in the Republic of Colombia and in Japan starting in March 1990. As a result of the field works carried out in Colombia as well as their review and analysis in Japan, the Draft Final Report on the Study has been prepared for the consideration and analysis by the Government of the Republic of Colombia.

The Study Team submitted and explained the Draft Final Report to the Government of Colombia on April 11, 1991 at the presence of counterpart personnel of CRQ and representatives of the concerned organizations from the Colombian side, and an exchange of opinions on the Report was made between the Colombian side and the Study Team on the same day.

1. As a consequence of the said explanation and an exchange of opinions, it has been agreed upon between the Colombian side and the Japanese Study Team as follows:

1.1 The Government of the Republic of Colombia officially received from the Study Team forty (40) copies of the Draft Final Report consists of the Main Report (in English and Spanish), Annex (in English) and Drawings (in English).

1.2 The Draft Final Report has been elaborated in accordance with the stipulations set forth in the Scope of the Work, and the agricultural development and coffee wastes treatment projects included in the Report have been formulated on the basis of an adequate diagnosis on the actual situation of the study area and devoted evaluation on its potentials and constraints prevailing there.

In the light of this, the methodology and concepts applied to formulate both projects are considered to be appropriate to the Colombian side.

1.3 The Colombian side shall send their comments on the Draft Final Report through JICA's office in Bogota within one (1) month from the date in which the Report was receibed (April 11, 1991).

2. *In view of high necessity to follow the Study, CRQ requested the Study Team to be contributed one vehicle (Isuzu Trooper) and survey equipment sent by JICA and the original of the topographic maps (scale 1/5000, 32 sheets) prepared by the Study Team, both used for the Study.*

In response to this request, the Study Team promised to convey it to the Governemnt of Japan.

LIST OF PARTICIPANTS

Nº.	NAME	POSITION	INSTITUTION
1.	LUIS EDUARDO ARIAS ESTEFAN	DECANO FACULTAD DE AGROINDUSTRIA	UNIVERSIDAD LA GRAN COLOMBIA
2.	AURA VICTORIA JARAMILLO C.	ASESORA EMPRESAS	SENA
3.	JULIAN SERNA GIRALDO	DIRECTOR GENERAL	C. R. Q.
4.	JUAN DE JESUS CASTILLO V.	JEFE DE PLANEACION	UNIVERSIDAD DEL QUINDIO
5.	ARTURO CELIS BELTRAN	TRADUCTOR	UNIQUNDIO-C.R.Q.
6.	ARMANDO RODRI-- GUEZ J.	ASESOR PLANEACION	C. R. Q.
7.	LUIS FERNANDO MAYA G.	JEFE SECCION DE AGUAS	C. R. Q.
8.	FERNANDO SAN- CHEZ O.	ING. QUIMICO	C. R. Q.
9.	MIGUEL ANGEL GAVIRIA O.	JEFE SECCION DE VIGILANCIA Y CONTROL	C. R. Q.

10.	JUAN PABLO HERNANDEZ J.	COORDINADOR- DRI	C. R. Q.
11.	ALVARO CEBALLOS	ASISTENTE TECNICO	PARTICULAR
12.	AURELIANO SABOGAL OSPINA	JEFE DE DIVISION DE RECURSOS NATURALES	C. R. Q.
13.	ALBA LUCERO ORDOÑEZ ARIAS	ING. CIVIL	PARTICULAR
14.	MASAHITO YAMANAKA	TEAM LEADER	STUDY TEAM
15.	TAKAHISA ISOZUKA	DEPUTY TEAM LEADER	STUDY TEAM
16.	TAMIO OTA	AGROECONOMY	STUDY TEAM
17.	SHIZUO HIROSHIGE	REPRESENTATIVE	ADVISORY TEAM

M.7 MEMORANDUM

Memorandum

On August 22, 1990, a meeting was held between the Japanese Study Team and Colombian counterpart personnel and in this meeting the following subjects were discussed and agreed upon between the relevant parties.

1. Delimitation of the Study Area

Referring to the topographic map with a scale of 1/5000 elaborated for the Study, boundaries of each study area were checked by the Study Team in collaboration with counterpart personnel at respective sites. As a result of this field reconnaisance survey, extensions of each study area have been determined definitely in the following manner.

1). Study Area for Integrated Agricultural Development

- Circasia:	2,735 ha
- Salento:	645 ha
- Quindio River, Right Margin:	2,040 ha
- Quindio River, Left Margin (1):	610 ha
- Quindio River, Left Margin (2):	175 ha
- Pijao:	800 ha
- Genova:	595 ha
Total	7,600 ha

2). Study Area for Coffee Waste Treatment

- Cristales River Basin:	9,400 ha

2. Correction of the Topographic Map (1/5000)

The first correction for the original maps are being conducted by the firm which elaborated these maps. It is requested that revision of these corrected maps should be made by the counterpart personnel by the end of September, 1990 so that the firm can correct the original maps definitely and hand over them to the Study Team prior to their departure for Japan. These definitely corrected maps will be used by the Study Team for preparation of the Draft Final Report.

3. Pilot Model Plant

The sites for the pilot model plant for the coffee waste treatment should be determined on being approved by JICA for

installation of the plant. The topographic survey and mapping with a scale of 1/100 in connection with an installation of the pilot model plant are required to be completed by the end of September, 1990. The definitive decision on implementation of the plant test is expected to be informed to C.R.Q. by the middle of September, 1990.

4. Objectives of the Project

The Study Team expressed their opinion relevant to the objectives of the Project in the following manner.

1). One of objectives of the project is , as mentioned in the minutes for the Scope of the Study, rectification of agricultural productivity existing between the Study Area and other developed areas within the Department. If this objective is to be accomplished, gross income will increase for not only small/medium farmers but also for large farmers. Nevertheless, major attention of the Project shall be paid to small/medium farmers, so prevailing disparity between large and small/medium farmers shall be rectified. It is understood that the definition of small, medium and large farmers should be made on the basis of farm size and the range of farm size applied for respective farmers shall be determined after an exchange of opinions between the Study Team and counterpart personnel.

2). In studying the disparity between coffee areas and marginal coffee areas, a comparison shall be made between coffee farmers with land use exclusive for coffee and other farmers.

3). The study of crop diversification shall comprise an improvement of existing natural pasture and shift of traditional coffee farming into other crops.

Signed in Armenia on August 22, 1990 between

Dr. Aureliano Sabogal Ospina
Project Director,
C.R.Q.

Mr. Masahito Yamanaka
Leader, Study Team
JICA

MEMORANDUM

FOR

THE FEASIBILITY STUDY

ON

THE QUINDIO BASIN INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT

IN

THE REPUBLIC OF COLOMBIA

AGREED BETWEEN

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

AND

CORPORACION AUTONOMA REGIONAL DEL QUINDIO (CRQ)

Armenia, October 10, 1990

Dr. Julian Serna Giraldo
General Director
CRQ

Mr. Masahito Yamanaka
Leader of the Study Team
JICA

(1) In response to the request of the Colombian side, the Japanese side accepted to implement the field test of the proposed coffee waste treatment system by constructing two model plants as agreed upon in the minutes of meeting signed by both parties on September 27, 1990.

(2) The Colombian side shall provide the JICA Study Team with the following two sites to construct two model plants and to conduct their test operation without any charge to the Japanese side.

- FINCA ROCIO (holding coffee farm of 8 ha)

- HACIENDA SEBASTOPOL (holding coffee farm of 25 ha)

(3) The JICA Study Team shall implement the field test of the model plants with the following schedule:

- October 1990: Preparation of Detailed Design and tender Documents

- November 1990: Award of Contract to Construction Firm

- Nov. 1990 to Mar. 1991: Construction of Plants

- April 1991: Test Operation

(4) The test results of the model plants may be compiled in the Final Report of the Study as an appendix.

(5) The Colombian side shall assist the JICA Study Team in the construction and operation of the model plants by providing the required counterpart personnel and services.

(6) The Colombian side shall continue the field test of the model plants for finalization of the treatment system after their hand-over to the colombian side.