2. Project Cost

2.1 Condition of Cost Estimation

The Project cost is estimated under the following conditions.

(1) Equipment Cost

The construction works will be executed on the contract basis. The construction machinery and equipment required for construction will be provided by the contractor. Accordingly, only depreciation costs of machinery and equipment are included to the equipment cost.

(2) Basic Unit Price

The basic rate of labor, material and construction equipment is estimated in the prevailing rate in the Dominican Republic. Detailed basic rate is shown in Tables M.2.1 through M.2.4.

(3) Construction Cost

The construction cost is divided into the foreign and local currency portion. The local currency portion is estimated on the basis of the current price in the Dominican Republic as of December, 1985 and the foreign currency portion is estimated on the CIF price at Santo Domingo. Construction cost is estimated based on unit cost for individual working items.

(4) Indirect Cost

Indirect cost is consisted of O&M equipment, engineering and administration cost. O&M equipment cost is provided for procurement of necessary equipment for maintenance of irrigation and drainage facilities.

Engineering and administration costs are necessary expenditures for detailed design, preparation of tender documents, tendering, tender evaluation and construction supervision.

(5) Physical Contingency

The physical contingency related to the construction and indirect cost is set at 15% of the cost.

(6) Price Contingency

The price escalation is assumed as 3% for foreign currency portion and 13% for local currency portion.

2.2 Project Cost

2.2.1 Project Cost

The estimated project cost is shown in Table M.2.4. and breakdown of Alternative B-I in Table M.2.5.

2.2.2 Annual Disbursement Schedule

The annual disbursement schedule is estimated on the basis of the project implementation schedule, and the summary is shown in Table M.2.6.

TABLE M.2.1 LABOR RATES

Unit: RD\$

Description		Rate/Day
Labor		13.69
Skilled-labor		15.44
Foreman		27.50
Carpenter		15.29
Sr Carpenter		24.86
Head Carpenter		29.95
Sr Mason		33.80
Head Mason	•	39.62
Steelman		27.56
Head Steelman		41.18
Welder		28.70
Driver (Light equipment)		18.95
Driver (Heavy equipment)		20.49
Driver (General)		20.49
Mechanic		18.95
Master Mechanic		28.70
Electrician		29.64
Driller	en e	29.02
Blaster		27.35
Plumber	•	21.53
Watchman		13.69
Surveyor		37.92
Operator (Mixing plant)		23.40
Assistant Operator		17.55

TABLE M.2.2 UNIT PRICE OF CONSTRUCTION MATERIAL

Unit: RD\$

Description		
Description	Unit	Total
Cement	ton	169.78
Grave1	3	15.45
Sand	3	31.45
Reinforcing Bar	ton	1 1820.00
Gasoline	Gl	3.93
Diesel	G1	3.45
Lubrication Oil	G1	22.00
Concrete Pipe		
36"	m	171.20
30"	m	127.63
18 ⁱ	m	35.57
15"	m	25.87

2.3 Operation and Maintenance Cost

The operation and maintenance cost annually required for the Project is composed of the salaries of O&M organization staff and the cost of operation and maintenance of O&M equipment and facilities. The estimated operation and maintenance cost is as follows.

Operation & Maintenance Cost per Year

(Unit: RD\$)

Alternatives	O&M Cost/Year	per Ha/Year
A-I	1,979,000	238.00
A-II	2,742,000	330.36
B-I	1,261,000	180.14
B-11	2,040,000	291.43

2.4 Replacement Period

Some of the facilities have shorter useful life than the project life and require replacement within the project life. The following table shows the useful life of the facilities.

Item	Useful Life	Cost (RD\$1,000)									
Te cm	OSCIGI DITE	A-I	A-II	B-I	B-II						
Gate (small scale)	30 years	1,421	1,421	1,253	1,253						
Pump and Motor	20 years	5,099	7,984	2,005	4,810						
O&M Equipment	8 years	3,479	3,479	3,479	3,479						

TABLE M.2.3 PROJECT COST

(Unit: RD\$1,000)

		F/C	L/C	Total
1.	Construction Cost			
	1.1 Preparatory Work	775	235	1,010
	1.2 Headworks	10,127	3,130	13,257
	1.3 Pumping Station	-		
	1.4 Sub-pumping Station		-	هب
	1.5 Irrigation Canal	7,020	9,377	16,397
-	1.5.1 Driving Canal	(316)	(424)	(740)
	1.5.2 Main Irrigation Canal	(4,388)	(7,338)	(11,726)
	1.5.3 Secondary Irrigation Canal	(780)	(1,030)	(1,810)
	1.5.4 Related Structures	(1,536)	(585)	(2,121)
	1.6 Drainage Canal	10,993	6,940	17,933
1.	1.6.1 Main Drainage Canal	(9,481)	(5,361)	(14,842)
	1.6.2 Secondary Drainage Canal	(865)	(688)	(1,533)
:	1.6.3 Lateral Drainage Canal	(387)	(628)	(1,015)
	1.6.4 Outlet of Drainage Canal	(260)	(263)	(523)
	1.7 Tide Gate		•-	-
	1.8 Training Dike	4,345	3,653	7,998
	1.9 Outlet Gate	805	292	1,097
	1.10 Road Work	2,495	2,802	5,297
	1.10.1 Truck Road	(47.)	(36)	(83)
	1.10.2 Main In-farm Road	(800)	(648)	(1,448)
	1.10.3 Lateral In-farm Road	(90)	(42)	(132)
	1.10.4 Bridge	(1,498)	(1,920)	(3,418)
:	1.10.5 Crossing Structure	(60)	(156)	(216)
2.	Total (1.1 - 1.10)	36,560	26,429	62,989
. 1	Indirect Cost	15,374	1,934	17,308
J •		(3,459)	(20)	(3,479)
	3.1 O&M Equipment 3.2 Engineering & Administration Cost	(11,915)	(1,914)	(13,829)
4.	Total (2 3.)	51,934	28,363	80,297
5.	Physical Contingency	7,777	4,246	12,023
6.	Total (4 5.)	59,711	32,609	92,320
7.	Price Escalation	9,509	31,931	41,340
8.	Ground Total (6 7.)	69,220	64,440	133,660

TABLE M.2.4 CONSTRUCTION COST OF ALTERNATIVE B-1

(RIGH)

1 Preparatory Works

	Remarks			
	~ <u>~</u>			
	Total	1,010,000	1,010,000	
Amount	רעכ	235,000	235,000	-
	F/C	775,000	775,000	
	Total			
Unit Rate	ר/כ			
	F/C			
	0, ty			
	Uni t	L.S.		
	Description	Preparatory Work	Total	

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	Remarks	85,000 10%	\$ C	335 276	편(SS	291	967	030	336	1200		000	70,400	84,300	755,083	000					-	-
	Total	6		450,276	· · ·	<u>ښ</u>	91,667		366,336			4,950,000				13,257,000		 			· ·	 -
Amount	2/1	137,000					77,588	·				56,000		42,150	150,565	3,130,000				-		
	F/C	548,000		1,506,290	28,667	1,880,039	14,079	98,493	86,592	135,828		4,894,000	35,200	42,150	604,518	10,127,000						
	Total	2.856.00		6.28	8.06	387.77	160.82	53.18	38.16	134.67			17,600.00									
Unit Rate	2/7	915.00		2.79	5.43	180.03	136.12	3.31	29.14	75.87			8,800.00								: : :	
	F/C	1.941.00		3.49	2.63	207.74	24.70	49.87	9.02	58.80			8,800.00	·								
	0,ty	1.50	}	71,700	10,900	9,050	270	1,975	9,600	2,310			ਦਾ	grand)			•					
	Unit	L.S.		ر: الله	*	*	E	E	" p	"E		L.S.	Unit	Uni t			:					
	Description	Temporary Works	Coffering &	Dewatering Excavation	Backfilling	Concrete Work	PC-Pile (Cut-off Wall	Wet Masonry	Foot Protection	Mechanical &	Electrical Work	Operation House	Operation Office	Miscellaneous (10%)	Total						

3 Irrigation Canal

:	Remarks		
	Re現	28	**
	Total	13,700 8,568 396,240 286,594 34,898 740,000	219,000 157,080 1,811,528 2,766,600 5,315,016 899,248 557,528
Amount	2/7	7,900 2,745 179,010 214,456 19,889 424,000	137,000 50,325 818,397 1,272,375 3,977,184 733,894 348,825 7,338,000
	F/C	5,800 5,823 217,230 72,138 15,009 316,000	82,000 106,755 993,131 1,494,225 1,337,832 165,354 208,703 4,388,000
	Total	2,856.00 10.16 260.54	2,856.00 10.16 12.72 260.54 20.72
Unit Rate	2/7	915.00 4.59 194.96	915.00 4.59 5.85 194.96 16.91
	F/C	1,941.00 5.57 65.58	1,941.00 5.57 6.87 65.58 3.81
	0.13	3 39,000 1,100	55 178,300 217,500 20,400 43,400
	Unit	L.S. ha	۲. S. ه الله الله الله الله الله الله الله ا
	Description	(1) Driving Canal Temporary Works Clearing Excavation Lining Concrete Miscellaneous (5 %) Sub Total	(2) Main Irrigation Canal Temporary Works Clearing Excavation Embankment Lining Concrete Wet Masonry Miscellaneous (5 %) Sub Total

(RD\$)

	Remarks		5 %						K) 24			سريمي									
	Total		17,700	285,600	85,028	1,810,000			95,000	15,728	8,392	570,183	1,274,036	19,932	386,338		37,725	99,944	2,121,000	16,397,000	
Amount	L/C		10,000	91,500	48,558	1,030,000			26,000	9,187	4,431	449,466	33,054	537	279,744		34,617	27,708	585,000	9,377,000	
	F/C		7,000	194,100	36,470	(%),UM			69,000	6,541	3,961	120,717	1,240,982	19,455	86,592		3,108	72,236	1,536,000	7,020,000	
	Total			2,856.00						3.27	2.14	375.12		6,664.	38.16		50.98				
Unit Rate	D/C			915.00					:	1.91	1.13	295.70		179.	29.14		46.78				
	F/C			1,941.00	•					1.36	1.01	79.42		6,485.	9.02		4.20				
	0'ty			100))))					4,810	3,922	1,520		m	8,600		740	-			
· · · · · · · · · · · · · · · · · · ·	Unit		L.S.	. E	1				r.	E	*		r.s.	Unit	"F		E				
	Description	(3) Secondary	Temporary Works	Clearing	Miscellaneous (5 %)	erior and	(4)Related Structure	of Irrigation Canal	Temporary Works	Excavation	Backfilling	Concrete Work	Slide Gate	Circular Gate 600mm	Wet Masonry	Precast	Concrete Pipe(18")	Miscellaneous (5 %)	Sub Total	Total	

(RD\$)		Remarks	> ₹	> 9	% %
		Total	673,000 9,794,750 3,669,120 705,130	29,700 807,040 686,760 30,200 1,553,000	19,700 977,040 18,960 1,015,000
	Amount	רעכ	243,000 3,787,625 1,076,040 254,335 5,361,000	13,000 236,680 424,860 13,460 688,000	12,000 604,440 11,560 628,000
		F/C	430,000 6,007,125 2,593,080 450,795 9,481,000	16,000 570,360 261,900 16,740 865,000	7,000 372,000 7,400 387,000
		Total	4.06	3.54 3.54	3.54
	Unit Rate	2/7	1.57	1.22	2.19
		F/C	2.49 2.94	2.94	1.35
		Q'ty	2412500	194,000	276,000
		Unit	に.S. 国間	E E	s. E
4 Drainage Canal		Description	(1) Main Drainage Canal Temporary Works Dredging Excavation Miscellaneous (5 %) Sub Total	(2) Secondary Drainage Canal Temporary Works Excavation Excavation Miscellaneous (2 %) Sub Total	(3) Lateral Drainage Canal Temporary Works Excavation Miscellaneous (2 %) Sub Total

(Sue)

	Remarks	96 96
	Total	9,700 281,740 186,149 20,757 24,654 523,000 17,933,000
Amount	ר/כ	4,900 222,400 4,340 12,380 263,000 6,940,000
	F/C	4,800 59,340 181,809 12,274 260,000 10,993,000
	Total	377.16 9,797.39 235.89
Unit Rate	3/1	297.72 228.46 215.69
	F/C	9,568.93
	Q, ty	747 19 88
	Unit	Unit E
	Description	(4) Outlet of Orainage Canal Temporary Works Concrete Work Circular Gate 800mm Precast Concrete Pipe(36") Miscellaneous (5 %) Sub Total Total

(RD\$)

5 Trainig Dike

	٠.		
	Remarks	10 %	
	Tota!	658,000 119,578 96,424 6,338,472 725,526 7,998,000	
Amount	7/7	300,000 95,687 37,287 2,888,560 331,466 3,653,000	
	F/C	358,800 23,891 59,137 3,509,912 394,060 4,345,000	
	Total	398.60 4.06	
Unit Rate	ר/כ	318.96 1.57	
	F/C	79.64	
	0, ty	300 23,750	
	Unit	L.S.	
	Description	Temporary Works Concrete Work Dredging Armour Concrete Unit Miscellaneous (10%) Total	

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6 Outlet Gate

				Unit Rate			Amount		
Description	Unit	Q°ty	F/C	2/7	Total	F/C	2/1	Total	Remarks
Temporary Works Concrete Work	L.S.	334	79.70	325.64	405.34	3,000			10%
PC-Pile (° 350x350) Gabion Works Gate	E E ∃ .	128	24.70	136.12	160.82	3,161 8,302 755,000		20,584 10,771 888,000	
Distribution Line Miscellaneous (10%) Total	r.s.		:			5,000 3,918 805,000	5,000 13,344 292,000	₩.	

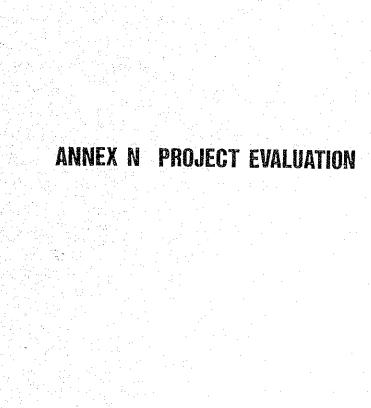
(RO\$)

7 Road Work

	Š														***************************************				-		·	_
	Remarks	de la	ર ૨		t=0.2		,		رن جو	. •	٠.	t=0.2					۲٦ حو				٠	
	Total	COS	2,184	56,046	17,906	3,264 83,000		-	65,000	93,654	479,651	741,820	67,875	1,448,000		:	2,400	124,872	4,728	132,000		
Amount	2/7	008 1	92.5		8,624				29,000	30,024				648,000			800	40,032	1,168	42,000		_
	F/C	000	1,484	32,508	9,282	1,726			36,000	63,630	278,208	384,540	37,622	800,000			1,600	84,840	3,560	90,000		
	Total		5,203.00	9.31	25.58		. "			5,203.00	9.31	25.58						5,203.00				
Unit Rate	ר/כ		1,668.00	3.91	12.32					1,668.00	3.91	12.32						1,668.00				
	£/C		3,535.00		13.26					3,535.00	5.40	13.26						3,535.00				
	Q'ty		0.42	6,020	700					81	51,520	29,000						24				
	Unit	0	ار: ع الع	"E	"⊟				L.S.	g	Ē	"El					L.S.	ha				
	Description	(1) Main Road	Stripping	Embankment	Gravel Surfacing	Miscellaneous (5 %) Sub Total		(2) Main Farm Road	Temporary Works	Stripping	Embankment	Gravel Surfacing	Miscellaneous (5 %)	Sub Total		(3)Lateral Farm Road	Temporary Works	Stripping	Miscellaneous (5 %)	Sub Total		

(RD\$)

	Remarks	بر ما جو
	Tota!	140,000 903,078 91,261 46,166 1,308,000 800,000 129,495 3,418,000 4,338 4,138 19,589 19,589 216,000
Amount	2/7	80,000 648,390 40,012 10,584 654,000 87,014 1,920,000 7,000 2,534 203 117,334 17,903 3,856 7,170 156,000
	F/C	60,000 254,688 51,249 35,582 654,000 420,481 1,498,000 1,804 1,804 1,804 1,804 1,804 1,804 2,700 1,804 1,804 1,804 1,804 1,804 1,804 1,804 1,804 1,804 1,804 1,804 1,804 1,804
	Total	1,612.64 190.13 96.18 8,000.00 50,000.00 3.27 2.14 257.74 174.91
Unit Rate	٦/٦	1,157.84 83.36 22.05 4,000.00 25,000.00 25,000.00 1.91 1.13 179.41 159.85
	F/C	454.80 106.77 74.13 4,000.00 25,000.00 25,000.00 1.36 1.01 78.33 15.06
	0, ty	560 480 480 163.5 163.5 180 654 112
	Unit	day Chit
	Description	(4) Bridge Temporary Works Coffering Dewatering Gabion Works Bridge Floor Abutment Miscellaneous(5%) Sub Total Structure Temporary Works Excavation Backfilling Concrete(Type-A) Precast Concrete Pipe(30") Precast Concrete Pipe(15") Miscellaneous (5 %) Sub Total



ANNEX N: PROJECT EVALUATION

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ANNEX N: PROJECT EVALUATION

1. Economic Evaluation

1.1 Annual Benefit

The expected benefit with the project is increased by production of rice crop. Increased production value in each alternative is estimated as follows:

In case of the medium term:

		Alternative A	Alternative B
Without project	:	RD\$ 7,182,000	RD\$ 6,405,000
With project	:	35,868,000	32,592,000
Increased benefit	;	28,686,000	26,187,000

In case of the long term:

Without project	:	RD\$ 7,182,000	RD\$ 6,405,000
With project	:	53,474,000	49,358,000
Increased benefit	:	46,292,000	42,953,000

Details are shown in Table N.1.1.

The increased production value has been calculated assuming the following conditions.

- The price of rice at the farmgate is sustained by the INESPRE in order to object of guarantee the farmer's income and stabilization of rice price by the price policy of the government. However, the price regarded as CIF, Santo Domingo by means of added freight and insurance to international trade price in the U.S. should be considered for the economic evaluation.

Financial price: RD\$707.7/ton (Sustaining price in 1985)

Economic price: RD\$840.0/ton (CIF, Santo Domingo in 1985)

	Unit	1983	1984	1985
Sustaining Price (farmgate)	RD\$	300.2	462.7	707.7
Mill Factory Price	RD\$	555.5	831.0	1,311.0
INESPRE (selling price)	RD\$	594.6	882.0	1,355.4
International Price in the U.S. (milled rice, whole sale price)		381.5	382.6	384.2
Parity Price	RD\$	598.9	1,056.0	1,198.7
Whole Sale Price in DR	RD\$	625.0	908.8	
Retail Price	RD\$	666.6	999.9	1,466.5

Source: Oficina de Planificacion e Informativa, INESPRE Agricultural Outlook, March 1985, U.S.D.A.

- The foreign exchange is managed under the floating exchange market act issued on January 23, 1985. The quotation of foreign exchange i the latest 3 years is as follows:

Year	Buying Rate	Selling Rate
1983 (Average)	1.557	1.571
1984 (Average)	2.762 (+1.205)	2.785 (+1.215)
1985 (November)	3.000 (+0.237)	3.010 (+0.224)
1985 (Average)*	3.106 (+0.344)	3.124 (+0.338)

Note: * Average of January - November, 1985 Value in parenthesis is the mean of escalation.

The exchange rate used for this study is US\$1.00 = RD\$3.12.

- In order to decide the price of agricultural input and cost for the project, the following items are taken into consideration.
- The domestic market price is applied for the economic price of the agricultural inputs. However, the inputs of low price are sold to the settlers in the IAD's settlement area, in accordance with the policy of the government.

- According to the census in 1981, the family structure in rural area surrounding the project area is composed of 4.9 persons per family and 2.0 persons engaged in farming practices. The wage for farming is low level caused by over labor force in and around the project area, and it seems that these situation will probably no dissolve in future after completion of the project. Hence, the minimum wage of RD\$8.00 per day is applied for the labor wage.
- Preparation cost with the project is estimated on the basis of the farm management plan shown in Annex J. In case of without project, preparation cost is applied at RD\$400 per ha as official price of the IAD.
- Interest for farming credit and water charge are not included in the production cost for calculation of the internal rate of return.
- Water charge is included in 0 & M cost.
- Annual production cost after completion of the project is equal to the cost corresponding to the target yield.

1.2 Costs

1.2.1 Project Cost

Project cost excluding price contingency will be paid corresponding to the process of works as described in Annex M. Annual outlay of each alternative is estimated as follows:

7.4			(Unit:	RD\$1,000)
Year	<u>A-I</u>	<u>A-II</u>	<u>B-I</u>	<u>B-11</u>
1987	2,645	2,645	2,645	2,645
1988	5,073	5,043	5,005	4,977
1989	14,930	18,905	10,407	13,799
1990	37,607	28,105	28,308	20,391
1991	45,419	44,983	33,553	33,420
1992	23,366	23,370	12,402	12,403
Total	129,040	123,051	92,320	87,640
				the state of the s

1.2.2 Replacement Cost

Replacement cost of each replacement period of 0 & M facilities and equipment will be required as follows:

Unit: RD\$1,000

T1	Life		Alternative			
Equipment	(Year)	A-1	A-II	BI	B-II	
O&M Equipment	8	3,479	3,479	3,479	3,479	
Pump (small scale)	20	2,004	2,004	-	ENNI	
Pump (main)	20	-	4,548		4,548	
Gate (small scale)	30	1,421	1,421	1,253	1,253	
Motor for Large Scale Gat	e 20	3,095	1,343	2,005	253	

The total amount of replacement cost in the project life of each alternative is estimated as follows:

			Unit:	RD\$1,000
	<u>A-I</u>	<u>A-11</u>	<u>B -1</u>	<u>B-11</u>
Total	30,724	36 ,494	22,658	29,969
Annual Base	614.5	729.0	453.2	599.4

Detailed replacement schedule is shown in Tables N.1.6 (1) to (4).

1.2.3 Production Cost

Production cost of the project is estimated as follows:

In case of the medium term:

		Alternative A	<u>Alternative B</u>
Without project		RD\$ 4,436,000	RD\$ 3,956,000
With project		20,271,000	17,825,000
Increased cost	:	15,835,000	13,869,000

In case of the long term:

	Alternative A	Alternative B
Without project :	RD\$ 4,436,000	RD\$ 3,956,000
With project :	26,996,000	24,170,000
Increased cost :	22,560,000	20,214,000

Details are shown in Tables N.1.2 to 4.

1.2.4 O&M Cost

Annual O&M cost for the project are shown in Annex M.

1.3 Economic Internal Rate of Return

Based on the benefit and cost as mentioned above, economic rate of return is calculated under the assumption that project life is 50 years. Summary is listed below and details are shown in Tables N.1.6 (1) to (4).

Alternative	EIRR
A-I	10.7%
A-II	10.5%
B-I	13.5%
B-II	13.3%

1.4 Relation between Benefit and Cost

Relation between benefit and cost with a 10% discount rate is calculated as follows:

Alternative	B/C
A-I	1.03
A-11	1.02
B-I	1.18
B-11	1.16

Details are shown in Table N.1.5.

1.5 Sensitivity Analysis

Sensitivity analysis have been made considering the parameters employed such as increase in construction cost, reduction in production, and combinations of these parameters.

	$\underline{A-I}$	<u>B-I</u>
Case (1) A 10% increase in construction cost	9.9%	12.6%
Case (2) A 10% reduction in production	8.7%	11.3%
Case (3) A combination of (A) and (B)	8.0%	10.5%
(1) (2)		

Detailed analysis is shown in Tables N.1.7 (1) to (6).

2. Financial Analysis

Financial analysis has been made on the Alternatives A-I and B-I to which the high priority among the Alternatives A and B is given in the economic evaluation.

Assuming that a foreign currency portion of the project cost will be financed from an international monetary institution and the remain is assumed to be covered by the responsibility of the government.

Unit:

RS\$1,000

Assumption for financial analysis is as follows:

(1) Financing

Alte	rnative	<u> </u>		
Yea	ı <u>r</u>	Amount	F/C	<u>L/C</u>
1	1987	2,890	2,391	499
2	1988	5,816	4,694	1,122
3	1989	19,419	10,983	8,436
4	1990	45,863	20,842	25,021
5	1991	69,633	33,517	36,116
6	1992	37,973	18,625	19,348
TOTA	L · ·	188,594	98,052	90,542
			(52%)	(48%)

Unit: RS\$1,000

Alte	rnative	<u>B-1</u>		*. **
<u>Yea</u>	r	Amount	F/C	L/C
1	1987	2,890	2,391	499
2	1988	5,718	4,694	1,024
3	1989	13,410	7,937	5,473
4	1990	39,211	20,594	18,617
5	1991	51,931	24,103	27,828
6	1992	20,500	9,501	10,999
TOTA	L	133,660	69,220	64,440
2	•		(51.8%)	(48.2%)

(2) Interest Rate and Term of Repayment

Interest Rate : 5% per annum

Grace Period : 7 years

Loan Period : 25 years

Amortization : 2 times repayment annually with constant

amount uniformity of the principal

Detailed analysis is shown in Table N.2.7.

Balance of agricultural household economy and revenue and expenditure of model settler are presented in Tables N.2.1 to 6. In addition, comparison between annual amortization and allotment (tentative) of the Alternatives A-I and B-I is shown in Table N.2.8.

TABLE N.1.1 TOTAL AMOUNT OF INCREMENTAL PRODUCTION

The same	Without Project	With Project		
Item	without Project	Medium Term	Long Term	
Harvested Area (Ha) Alternative (A) Alternative (B)	3,420 3,050	12,400 11,000	15,500 14,000	
Yield (t/ha) Alternative (A) Alternative (B)	2.5	3.4 3.5	4.1 4.2	
Production (t) Alternative (A) Alternative (B)	8,550 7,625	42,700 38,800	63,660 58,760	
Incremental Production (t) Alternative (A) Alternative (B)		34,150 31,175	55,110 51,135	
Incremental Value of Production (RD\$707.70/t) Alternative (A) Alternative (B)		24,167,955 22,062,547	39,001,347 36,188,240	
Incremental Value of Production (RD\$840/t) Alternative (A) Alternative (B)	-	28,686,000 26,187,000	46,292,000 42,953,000	

TABLE N.1.2 RICE PRODUCTION COST (FINANCIAL)

UNIT : RD\$/ha

13					PRO	PRODUCT I ON	N COST				TARGET	GROSS	N.P.V.	8/4
	SEED	FERT.	AGRO	LABOR	. 1	MACH.	MACH. DRAFT	WATER	OTHERS	TOTAL	YIELD	INCOME (A)	(8)	8
	-		CHEM.	CHEM. FAMILY HIRED	HIRED		ANIMAL	ANIMAL CHARGE			t/ha	@RD\$707.7		
1.WITHOUT PROJECT	108	95	æ	445	112	400	8	25	40	1,288	2.5	1,769	481	27
		-							1					, , .
Z.WITH PROJECT														
(1) 1R AREA			-											
- MEDIUM TERM	43	165	246	456	240	210	48	80	41	1,529	8 8	2,689	1,160	43
- LONG TERM	43	195	289	480	256	233	48	80	48	1,672	5.0	3,539	1,867	23
(2) 2R AREA														
- MEDIUM TERM	43	156	231	432	232	210	48	8	33	1,471	3.4	2,406	935	œ
- MEDIUM TERM*	48	147	190	648	352	254	65	80	34	1,818	3.6	2,548	730	28
- LONG TERM	43	185	274	456	240	233	48	88	46	1,605	4.0	2,831	1,226	43
(3) 3R AREA			÷			•								
- MEDIUM TERM*	48	147	190	648	352	254	65	80	34	1,818	2.8	1,982	164	∞
- LONG TERM	43	165	246	456	248	210	48	80	41	1,537	3.2	2,265	728	33
(4) 4R AREA	•				-									
- MEDIUM TERM*	48	147	190	648	352	254	65	80	34	1,818	2.6	1,840	22	-
- LONG TERM*	48	184	238	889	368	282	65	80	42	1,995	3.0	2,123	128	Ø

NOTE * Traditional variety

TABLE N.1.3 RICE PRODUCTION COST (ECONOMIC)

HEM					PRO	PRODUCT I ON	IN COST				TARGET	GROSS	N.P.V.	8/A
	SEED	FERT.		LABOR		MACH.	DRAFT	WATER	OTHERS	TOTAL	VIELD	INCOME (A)	(8)	<u>ક્</u>
			CHEM.	FAMILY H	HIKED		ANIMAL	CHARGE			t/ha	eRD\$707.7		
								÷6 →6						
1.WITHOUT PROJECT	108	110	23	445	112	400	30		40	1,297	2.5	2,100	803	38
			-											-
2.WITH PROJECT														
(1) IR AREA						٠								
- MEDIUM TERM	43	188	334	456	240	210	48		23	1,576	3.8	3,192	1,616	27
- LONG TERM	43	221	395	480	256	233	48		999	1,742	5.0	4,200	2,458	දිදි
(2) 2R AREA														
- MEDIUM TERM	43	177	316	432	232	210	8\$. •	54	1,512	8. 4.	2,856	1,344	47
- MEDIUM TERM*	48	165	212	81/9	352	254	65		42	1,786	3.6	3,024	1,238	41
- LONG TERM	43	199	358	456	240	233	48		09	1,637	4.0	3,360	1,723	泛
(3) 3R AREA			-											
- MEDIUM TERMS	48	165	212	648	352	254	65		42	1,786	2.8	2,352	266	24
- LONG TERM	43	188	334	456	248	210	48		88	1,806	3.2	2,688	887	KS
(4) 4R AREA							-		75 T					
- MEDIUM TERM*	48	165	212	648	352	254	65		42	1,786	2.6	2,184	338	13
- LONG TERM	8	206	265	889	368	282	9		25	1,974	3.0	2,520	576	R

NOTE * Traditional variety ** Water

** Water charge is excluded

TABLE N.1.4 TOTAL AMOUNT OF PRODUCTION COST (ECONOMIC)

	WIT	HOUT PRO)JECT			WITH	PROJECT	The Cartes	(************************************
ALTERNATIVE			- 4	_MED I		PLAN	1.0	NG TERM	
	AREA (ha)	COST PER ha	TOTAL COST	AREA (ha)	COST PER ha	TOTAL COST	AREA (ha)	COST PER ha	TOTAL
	(1147)			(11th)					COST
		RD\$	RD\$1000		RD\$	RD\$1000		RD\$	RD\$1000
ALTERNATIVE A	* * * ·		•						
1 R (2,900 ha)				5,800	1,576	9,141	5,800	1,742.	10,104
2 R (2,400 ha)				2,400	1,512	3,629	4,800	1,637	7,858
	3,420	1,297	4,436	1,200	1,786	2,143			
3 R (1,900 ha)				1,900	1,786	3,393	3,800	1,806	6,863
4 R (1,100 ha)		•		1,100	1,786	1,965	1,100	1,974	2,171
TOTAL (A)			4,436			20,271			26,996
ALTERNATIVE B									
1 R (2,900 ha)				5,800	1,576	9,141	5,800	1,742	10,104
2 R (2,200 ha)	3,050	1,297	3,956	2,200	1,512	3,326	4,400	1,637	7,203
				1,100	1,786	1,965			
3 R (1,900 ha)				1,900	1,786	3,393	3,800	1,806	6,863
TOTAL (B)			3,956			17,825			24,170

TABLE N.1.5 RELATION OF BENEFIT AND COST (B/C)

UNIT : 1.000 RD\$

- WITH A FACTOR OF 10 % DISCOUNT RATE -

A - I	Σ B 214,764	Σ C 207,759	B/C 1.03	DIFFERENCE(N.P.V.) 7,006
A - 11	214,764	209,376	1.02	5,388
B - 1	198,176	167,748	1.18	30,428
B - 11	198,216	170,560	1.16	27,654

TABLE N.1.6(1) ESTIMATION OF EIRR (ALTERNATIVE A-1)

			~~~					(UNIT : THOU	
		PROJECT COS	18	•				- PRESENT WOR DISCOUNT	
YEAR		0 & N COSTS	REPLACE- MENT COSTS	PRODUCTION COSTS	TOTAL	INCREMENTAL BENEFIT		( 10 <b>x</b> )	
1987	2645.00	4.0	0.00	0.00		0.00	-2645,00	-2404,55	-2382,88
1988	5073.00	0.00	0.00	0.00	5073.00	0.00	-5073.00	-4192,56	-4117,36
1989		0.00	0.00	0.00	14930,00	0.00	-14930,00	-11217.10	-10916.70
1990	37607.00	0.00		0.00	37607.00	0.00 0.00 0.00	-37607.00	-25686.10	-24772.90
1991	45419.00	0.00	0.00	0.00	45419.00	0.00	-45419.00	-28201.60	-26954.00
1992	23366.00	0.00	0.00	0.00	23366.00 17814.00		-23366.00 10872.00	-13189.50 5579.05	-12492,40 5236,59
1993	0,00	1979.00	0.00 0.00	15835.00 15835.00	17814.00	28686.00	10872.00	5071.87	4717.6
1994	0.00 0.00	1979.00 1979.00		15835.00	17814.00	28686.00	10872.00	4610.79	4250.14
1995	0.00	1979.00	0.00	15835.00	17814 :00	28686.00	10872.00	4191.63	3828.9
1997	0.00	1979.00	0.00	15835.00	17814.00	28686.00	10872.00	3810.57	3449.5
1998	0.00	1979.00	1710.00	15835.00	19524.00	28686.00	9162.00	2919.30	2618.8
1999	0.00	1979.00	1769.00	22560.00	26308.00	46292.00	19984.00		5146.1
2000	0.00	1979.00	0.00	22540 00	24539.00	46292.00	21753,00	5728.25	5046.5
2001	0.00	1979.00		22560.00	24539.00	46292.00	21753.00		4546.44
2002	0.00	1979.00	0.00	22560.00	24539.00	46292.00	21753.00	4734.09	4095.9
2003	0.00	1979-00		22560.00	24539.00	46292.00	21753.00	4303,72	3690.0
2004	0.00	1979.00		22560.00	24539.00	46292.00	21753.00	3912.47	3324.3
2005	0.00	1979.00		22560.00	24539.00	46292.00	21753.00	3556.79	2994,9
2006	0.00	1979.00		22560.00	26249.00	46292.00	20043.00	2979,26	2486.0
2007	0.00	1979.00	1769.00	22560.00	26308.00	46292.00	19984.00	2700,45	2233.0
2008	0.00	1979.00	0.00	22560.00	24539,00	46292.00	21753.00	2672.27	2189.8
2009	0.00	1979,00	0.00	22560.00	24539.00	46292.00	21753.00	2429.34	1972.8
2010	0.00	1979.00	0.00	22560.00	24539.00	46292.00	21753.00	2208.49	1777.3
2011	0.00	1979.00	0.00	ZZ>60.00	24539.00	46292.00	21753.00	2007.72	
2012	0.00	1979.00	0.00		24539.00		21753.00	1825,20	1442.
2013	0.00	1979.00	5099.00		29638.00	46292.00	16654.00		994.9
2014	0.00	1979.00	1710.00		26249.00		20043.00		1078.7
2015	0.00	1979,00	1769.00	22560.00	26308.00	46292.00	19984.00		968.9
2016	0.00	1979.00	0.00	22560.00	24539.00		21753.00		950.2
2017	0.00	1979.00	0.00	22560.00	24539.00				856.0
2018	0.00	1979.00	0.00		24539.00		21753.00		771.2 694.8
2019	0.00	1979.00		22560.00	24539.00		21753.00 21753.00	936.61 851.47	625.9
2020	0.00	1979.00		22560.00 22560.00	24539.00	46292.00 46292.00	21753.00	the first of the second of the	563.9
2021 2022	0.00	1979.00		22560.00	24539.00 26249.00	46292.00	20043.00	the contract of the contract o	468.
2022 2023	0.00	1979.00 1979.00	1710.00 3190.00	22560.00	27729.00	46292.00	18563.00		390.
2023 2024	0.00 0.00	1979.00		and the second second	24539.00	46292.00	21753.00	The second second	412.
2025	0.00	1979.00		22560.00	24539.00	46292.00	21753.00		371.
2026	0.00	1979.00	0.00	22560.00	24539.00		21753.00		334
2027	0.00	1979.00	0.00	22560.00	24539.00		21753.00	and the second of	
2027 2028	0.00	1979.00	0.00		24539.00		21753.00		271.
2029	0.00	1979.00	0.00	22560.00	24539.00		21753.00	The state of the s	214
2030	0.00	1979.00	1710.00	22560.00	26249.00		20043.00	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	203.
2031	0.00	1979.00	1769.00	22560.00	26308.00		19984.00		182.
2032	0.00	1979.00	0.00	22560.00	24539.00		21753.00	271 30	178
2033	0.00	1979.00	5099.00	22560.00	29638.00		16654.00		123.4
2034	0.00	1979.00	0.00	22560.00				224.22	145
2035	0.00	1979.00		22560,00	24539.00		21753.00	203.84	130.
2036	0.00	1979.00	0.00		24539.00	and the state of the state of the	and the second of the second	185.30	117.
2037	0.00	1979.00	0.00		24539.00		21753.00	168.46	
2038	0.00	1979.00	1710.00	22560,00	26249,00	46292.00	20043,00	141.11	88.
TOTAL	129040.00	01034_00	30724 00	997410 00	1248210.00	2023800.00	775588.00	7178.35	-3411.3

INTERNAL RATE OF RETURN(IRR) = 10 + 7178.35 / ( 7178.35 + 3411.35 ) = 10.7 x

***	***				-				(UNIT: THOU	ISAND ROS
			PROJECT COS	rs					- PRESENT WON	RTH VALUE
YI	EAR	CONSTRUC- TION COSTS	O & M COSTS	REPLACE- MENT COSTS	PRODUC- TION COSTS	TOTAL		PROJECT RETURN		( 11 %
	1987		0.00	0.00	0.00	2645.00	0.00	-2645.00	-2404.55	-2382.
	1988	5043.00 18905.00	0,00	0.00	0.00	2042.00	U.UU	-5043.00 -18905.00	-4167.77	~4093.
	1989 1990	28105.00	0.00	0.00 0.00	0.00	28105.00	0.00 0.00		-14203.60 -19196.10	-13823. -18513.
	1991	44983.00	0.00	0.00	0.00	44983.00	0.00	-44983.00	-27930.90	-26695.
6.	1992	23370.00	0.00	0.00	0.00	23370.00	0.00	-23370.00	-13191.80	-12494
	1993	0.00	2936.00	0.00	15835.00	18771.00	28686,00	9915.00	5087.96	4775.
	1994	0.00	2936.00	0.00	15835.00	18771.00		9915.00	4625.42	4302.
	1995		2936.00	0.00 0.00	15835.00 15835.00	18771.00 18771.00	28686,00 28686,00	9915.00 9915.00	4204.93 3822.66	3876. 3491.
	1996 1997	0.00 0.00 0.00	2936.00		15835.00	18771.00	28686.00	9915.00	3475.15	3145
	1998	0.00		1710.00	15835.00	20481.00	28686.00	8205.00	2614.37	2345
	1999	0.00	2936.00		22560.00	27265.00	46292.00	19027.00	5511.44	4899
	2000	0.00	2936,00	0.00	22560.00	25496.00	46292.00	20796.00	5476.24	4824
	2001	0.00	2936.00		22560.00	25496.00	46292.00	20796.00	4978.40	4346
16	2002	0.00	2936.00	0.00	22560.00	25496.00		20796.00	4525.82	3915
17	2003	0.00	2936.00 2936.00	0.00	22560,00 22560,00	25496.00 25496.00	46292.00 46292.00	20796.00 20796.00	4114.38 3740.34	3527 3178
18 19	2004 2005	0.00 0.00	2936.00	0.00 0.00	22560.00			20796.00	3400.31	2863
20	2006	0.00	2936.00		22560.00	27206.00	46292.00	19086,00	2837.01	2367
21	2007	0.00	2936.00	1769.00		27265.00	46292.00	19027.00	2571.13	2126
22	2008	0.00	2936.00	0.00	22560.00	25496.00		20796.00		2093
23	2009	0.00	2936.00	0.00	22560.00	25496.00	46292.00	20796.00	2322.46	1886
	2010	0.00	2936.00	0.00	22560.00	25496.00	46292.00	20796.00	2111.33	1699
25	2011	0.00	2936.00	0.00		25496.00 25496.00	46292.00 46292.00	20796.00 20796.00	1919.39 1744.90	1530 1379
26 27	2012 2013	0.00 0.00	2936.00 2936.00	7984.00		33480.00	46292.00	12812.00	977.27	765
	2014	0.00	2936.00	1710.00	22560.00	27206.00	46292.00	19086,00	1323.49	1027
29	2015	0.00	2936.00	1769.00	22560.00	27265.00	46292.00	19027.00	1199.45	922
	2016	0.00	2936.00			25496.00	46292.00	20796.00	1191.79	908
	2017	0.00	2936.00	0.00	22560.00	25496.00		20796.00	1083.44	818
	2018	0.00		0.00		25496.00 25496.00	46292.00 46292.00	20796.00 20796.00	984.95 895.41	737 664
	2019	0.00	2936.00 2936.00	0.00 0.00	22560.00 22560.00	25496.00	46292.00	20796.00	814.81	598
34 35	2020 2021	0.00 0.00				25496.00	46292.00	20796.00	740.01	539
	2022	0.00	2936.00	1710.00	22560.00		46292.00	19086.00	617.42	445
	2023	0.00	2936.00	3190.00	22560.00	28686.00			517.76	370
38	2024	0.00	2936.00		22560.00	25496.00	46292.00	20796.00	555.98	394
	2025	0.00	2936.00		22560.00	25496.00	46292.00	20796.00	505,44 459,49	355 319
	2026	0.00	2936.00	0.00	22560.00 22560.00	25496.00 25496.00	46292.00 46292.00	20796.00 20796.00	437.47	288
	2027	0.00 0.00	2936.00 2936.00	0.00 0.00	22560.00	25496.00	46292.00	20796.00	379.74	259
	2028 2029	0.00	2936.00	0.00	22560.00	25496.00	46292.00	20796.00	345,22	233
	2030	0.00	2936.00		22560,00	27206.00	46292.00	19086.00	288.03	193
	2031	0.00	2936.00	1769.00	22560.00	27265.00			261.04	173
	2032	0.00	2936,00		22560.00			20796.00		171 94
47	2033	0.00	2936.00	7984.00	22560.00			12812.00 20796.00	145,27 214,35	94 138
	2034	0.00	2936.00	0.00	22560.00	25496.00 25496.00		20796.00	194.87	125
	2035	00,00	2936.00 2936,00		22560.00 22560.00			20796.00	177.15	112
	2036 2037	0.00 0.00	2930,00 2034 NO	0.00	22560.00	25496.00		20796.00	161 05	101
	2038	0.00 0.00	27.30.00 293A AA	1710.00	22560.00	27206.00	46292.00	19086.00	134.37	
	COTAL	123051.00	135056.00	36494.00		1292010.00	2023800.00		5387.72	-4584

TABLE N.1.6(3) ESTIMATION OF EIRR (ALTERNATIVE B-1)

									(UNIT : THOU	SAND ROS)
			PROJECT COS	TS	-				- PRESENT WOR	TH VALUE -
Y!	EAR	CONSTRUC- TION COSTS	0 & M COSTS	REPLACE-	PRODUC-	TOTAL	INCREMENTAL BENEFIT	PROJECT	(13 %)	
+ <i>'</i>	1987	2645.00	0.00	0.00	0.00	2645,00	0.00	-2645.00	-2340.71	-2320.18
	1988	C00C 00	ሰ ሰሰ	0.00		5005.00	0.00	-5005,00	-3919.65	-3851.19
	1989	10407.00 28308.00	0.00	0.00	0.00	10407.00	0.00	-10407,00		-7024.43
Ĭ.	1990	28308.00	0.00	0,00	0.00	28308.00	0.00	-28308.00		-16760.60
5	1991	33553.00	0.00	0.00	0.00	35555.00		-33553.00	-18211,20	-17426.40
6	1992	12402.00	0.00	0.00	0.00	12402.00		-12402.00	-5956.91	-5650.19
7	1993	0.00	1261.00	0.00	13869.00	15130.00		11057.00		4418.79
8	1994	0.00	1261.00	0.00		15130.00		11057.00	4159.20	3876.13
	1995	0.00	1261.00	0.00	13869.00	15130.00	26187.00	11057.00 11057.00	3680.71 3257.26	3400.12 2982.56
	1996	0.00	1261.00		13869.00	15130.00	26187.00 26187.00	11057.00		2616.28
	1997	0.00	1261.00	บ.เบ	13869.00 13869.00	15130.00 16840.00	26187.00	9347.00		1940.06
	1998	0.00	1261.00	1769.00	20214.00	23244.00		19709.00	4023.88	3588.41
13 14	1999 2000	0.00 0.00	1261.00 1261.00	0.00	20214.00	21475.00		21478.00		3430.25
15	2000	0.00	1261.00	0.00	20214.00	21475.00	42953.00	21478.00	3434.13	3008.99
	2002	0.00	1261.00	0.00 0.00 0.00	20214.00	21475.00		21478.00		2639.47
17	2003	0,00	1261.00	0.00	20214.00	21475.00		21478.00	2689.43	2315.32
18	2004	0.00	1261.00	0.00	20214.00	21475.00	42953.00	21478.00	2380.03	2030,99
	2005			0.00	20214.00	21475.00		21478.00		1781.57
20	2006	0.00	1261.00		20214.00	23185.00		19768.00		
21	2007	0.00	1261.00		20214.00	23244.00	42953.00	19709.00	1513.62	1257.95
22	2008		1261.00		20214.00	21475.00		21478.00	1459.72	1202,51
23	2009	0.00	1261.00	0.00	20214.00	21475.00		21478.00		1054.83
24	2010	0.00	1261.00		20214.00	21475.00		21478.00	1143.17	925.29
25	2011	0.00	1261,00	0.00	20214.00		42953.00	21478.00	1011.66 895.27	811.66 711.98
26	2012	0.00	1261.00		20214.00	21475.00		21478.00 19473.00		566.24
27	2013			2005.00	20214.00 20214.00	23480.00 23185.00		19768.00		504.23
28 29	2014 2015		1261.00	1710.00 1769.00	20214.00	23244.00		19709.00		
29 30	2015	0.00		0.00		21475.00		21478.00	549.09	421.55
31	2017	0.00	1261.00	0.00 0.00	20214.00	21475.00		21478.00	485.92	369.78
	2018	0.00	1261.00	0.00	20214.00			21478.00		324.37
33	2019	0.00	1261.00		20214.00	21475.00		21478.00		284.53
34	2020	0.00	1261.00				42953.00	21478.00	336.77	249.59
35	2021	0.00	1261.00		20214.00	21475.00		21478.00		218.94
36	2022	0.00	1261.00	0.00	20214.00	21475.00		21478.00	263.74	
37	2023	0.00	1261.00		20214.00	24497.00	1000000	18456.00		
38	2024	0.00	1261.00		20214.00	21475.00		21478.00	206.54	147.78
39	2025			0.00	20214.00			21478.00		129.63
40	2026	00.0	1261.00	0.00	20214.00	21475.00		21478.00	161.75	113.71
	2027	0.00	1261.00		20214.00	21475.00		21478.00		87.50
	2028	0.00	1261.00	0.00	20214.00					76.75
43	2029	0.00	1261.00		20214.00 20214.00	21475.00 23185.00	1124	19768.00		61.97
		0.00	1261.00			23244.00	1.4	19709.00		
45 46	2031 2032	0.00 0.00	1201.00	1769.00	20214.00	21475.00		21478.00	77.69	51.81
	2032	0.00	1261.00	0.00 2005.00	20214.00	23480.00		19473.00	62.34	41.20
	2034	0.00	1261.00	0.00	20214.00	21475.00		21478.00	28.03	30 84
	2035	0.00	1261 00	0.00	70214.00	21475.00	42953.00	21478.00	53,85	34.97
50	2036	0.00	1261.00	0.00	20214.00	21475.00	42953,00	21478.00	47.65	30.67
	2037	0.00 0.00	1261.00	0.00	20214.00	21475.00	42953.00	21478.00	42.17	26.91
		0.00	1261.00	1710.00	20214.00	23185.00	42953,00 42953,00 42953,00	19768.00	34.35	21.72
		92320.00	58006.00	22658.00	. 891774.00	1064760.00	1875240.00	× 810484.00	2778.55	-2866.01

INTERNAL RATE OF RETURN (IRR) = 13 + 2778.55 / ( 2778.55 + 2866.01 ) = 13.5 %

TABLE N.1.6(4) ESTIMATION OF EIRR (ALTERNATIVE B-II)

(UNIT: THOUSAND RD\$)

		and the second s	PROJECT COS	TS		***************************************			- PRESENT WOR	ATH VALUE -
Y	EAR	CONSTRUC- TION COSTS	M & O	REPLACE- MENT COSTS		TOTAL.	INCREMENTAL BENEFIT	PROJECT	DISCOUNT	
1	1987	2645.00	0.00	0.00	0.00	2645.00	0.00	-2645.00	-2340.71	-2320.18
	1988	4977.00	0.00	0,00	.0.00	4977.00		-4977.00	-3897.72	-3829.64
	1989	13799,00	0.00	0.00	0.00	13799.00	0.00	-13799:00	-9563,40	-9313.93
Ļ	1990	20391,00	0.00	0.00	0.00	20391.00	0.00	-20391.00	-12506.20	-12073.10
	1991	33420.00	0.00	በ በስ	0.00	33420.00	0.00	-33420.00	-18139.00	-17357.30
	1992	12408.00	0.00 0.00	0.00	0.00	12408.00	0.00	-12408.00	-5959.79	-5652.92
	1993	0.00	2243.00	0.00	13869.00	16112.00	26187.00	10075.00	4282.49	4026.35
	1994	0.00		0.00	13869.00	16112.00	26187.00	10075.00	3789.81	3531.88
	1995		2243:00	0.00		16112.00	26187.00	10075.00	3353,81	3098.14
	1996	0.00	2243.00	0.00	13869.00	16112.00	26187.00	10075.00	2967.98	2717.67
	1997	0.00	2243.00				26187.00	10075.00	2626.53	2383.92
	1998	0.00	2243.00	1710.00		17822.00	26187.00	8365,00	1929.85	1736.23
13	4000	0.00	2243.00	1769.00	20214.00	24226.00	42953.00	18727.00	3823.39	3409.62
	2000		2243.00	0,00	20214.00	22457.00		20496.00	3703.15	3273.42
15		0.00	2243.00		20214.00			20496.00	3277.12	2871.42
16		0.00	2243.00	0.00				20496.00	2900.11	2518.79
17		0.00	2243.00	0.00	20214.00	22457.00				2209.46
18	2004	0.00	2243.00		20214.00	22457.00		20496.00	2271.21	1938.13
19	100	0.00		0.00	20214.00	22457.00		20496.00		1700.11
20	2006	0.00	2243.00	1710.00		24167.00		18786.00		1366.90
21	2007	0.00	2243.00	1769.00	20214.00	24226.00		18727.00		1195.27
22		0.00	2243,00			22457.00		20496.00	1392.98	1147.53
23		0.00	2243,00		20214.00	22457.00		20496.00		1006.60
24		0.00	2243.00			22457.00		20496.00	1090.90	882.99
25	2011	0.00	2243.00	0.00	20214.00	22457.00		20496.00		774.55
26	2012	0.00	2243.00	0.00		22457.00		20496.00		679.43
27		0.00	2243.00			27267.00		15686.00		456.12
28	4 4 4	0.00	2243.00	1710.00		24167.00		18786.00		479.18
29		0.00	2243.00			24226.00		18727.00	541.00	419.01
30			2243.00			22457.00		20495.00		402,28
31		0.00	2243.00			22457.00		20496.00	463.70	352.87
	2018	0.00	2243.00			22457.00		20496.00	410.35	309.54
33		0.00	2243.00			22457.00		20496.00	363.15	271.53
34	and the second of the second	0.00	2243.00	0.00		22457.00		20496.00	321.37	238.18
35		0.00	2243.00			22457.00		20496.00	284.40	208.93
36		0.00	2243.00			24167.00		18786.00	230.68	167,98
	2023	0.00	2243.00			25479.00	42953.00	17474.00	189.89	137.06
	2024	0.00	2243.00			22457.00		20496.00	197.10	141.02
	2025	0.00	2243.00			22457.00		20496.00	174.43	123.70
40		0.00	2243.00			22457.00		20496.00	154.36	108.51
	2027		2243.00		and the second second	22457.00		20496.00	136.60	95,19
42		0.00	2243.00	0.00		22457.00		20496.00	120.89	83.50
	2029	0.00	2243.00			22457.00		20496.00	106.98	73.24
	2030	0.00 0.00	2243.00			24167.00		18786.00	86.77	58.89
	2031		2243.00			24226.00		18727.00		51.49
46 46	4 4 4	00.0	10 to	107.4	for the second	22457.00	4.4	20496.00	74.14	49.44
		0.00		4801.00		27258.00	42953.00	15695.00	50.24	33.21
47	2034	0.00	2243.00			22457.00		20496,00	58.06	38.04
	2035		2243.00			22457.00		20496.00		33.37
		0.00	2243.00	0.00		22457.00		20496.00		29.27
50		0.00	2243.00			22457.00		20496.00		25.68
	2037		2242.00	1710.00	20214.00			1.0		20.25
	2038	87640.00	102170 nn	29969.00	891774 00	1112560.00	1874880.00			-3671.20
	TOTAL		103110.00							~
							7471 00 1	_ 1778		

INTERNAL RATE OF RETURN(IRR) = 13 + 1625.43 / ( 1625.43 + 3671.20 ) = 13.3 %

## TABLE N.1.7(1) SENSITIVITY ANALYSIS (ALTERNATIVE A-1)

(1) A 10% increse in construction cost

•			PROJECT COS	TS					- PRESENT WOR	
١	YEAR	CONSTRUC- TION COSTS	0 & M 27200	REPLACE- MENT COSTS	PRODUC- TION COSTS		INCREMENTAL BENEFIT	PROJECT	( 9 % )	
1	1987	2917.00	0.00	0.00	0.00	2917.00			-2676, 15	-2651.8
2		5580.00	0.00	0.00	0.00	5580.00			-4696,57	-4611.5
3	1989	16423.00	0.00	0.00		16423,00	0.00	-16423.00	-12681.60	-12338.80
4		41368.00	0.00	0.00	0.00	41368.00	0.00		-29306.10	-28254.90
S		49961.00	0.00	00.00		49961.00		-49961.00	-32471.20	-31021.8
5		25703.00	0.00	0.00	0.00	25703.00	0.00	-25703.00	-15325,90	-14508.7
7			2010.00	0.00	15835.00	17845.00		10841.00	5930.40 5440.73	5563.1 5057.4
8		0.00	2010.00	0.00	15835.00	17845.00	28686.00	10841.00	4991.50	4597.6
9		0.00	2010.00		15835.00	17845.00	28686.00	10841.00	4579.35	4179.6
0	4.5	0.00	2010.00	0.00	15835.00	17845.00		10841,00 10841,00	\$201.24	3799.7
1		0.00	2010.00		15835.00	17845.00 19555.00	28686.00 28686.00	9131.00	3246.39	2909.4
2		0.00	2010.00	1710.00	15835.00 22560.00	26339.00	46292.00	19953.00	6508.24	5779.6
3		0.00	2010.00	1769.00 0.00	22560.00	24570.00	46292.00	21722.00	6500.23	5720.0
4		0.00	2010.00	0.00	22560.00	24570.00	46292.00	21722.00	5963.51	5200.0
5		0.00	2010.00		22560.00	24570.00	46292.00	21722.00	5471.11	4727.3
6		0.00	2010.00 2010.00		22560.00	24570.00	46292.00	21722.00		4297.5
7		0.00 0.00	2010.00	0.00	22560.00	24570.00	46292.00	21722.00	4604.92	3906,8
8	4.5	0.00	2010.00		22560.00	24570.00	46292.00	21722.00	4224.70	
y		0.00	2010.00	1710.00	22560.00	26280.00	46292.00	20012.00	3570.76	2974.6
		0.00	2010.00		22560.00	26339.00		19953.00	3266.26	
1		0.00	2010.00	0,00	22560.00	24570.00	46292.00	21722.00	3262.24	2668.4
3		0.00	2010.00	0.00	22560.00	24570.00	46292.00	21722.00	2992.88	2425.8
J 4		0.00	2010.00	0.00	22560.00	24570.00	46292.00	21722.00	2745.77	2205.3
4 5		0.00	2010.00	0.00	22560.00	24570.00	46292.00	21722.00	2519.05	2004.8
δ			2010.00		22560.00	24570.00		21722.00	2311.06	1822.5
7		0.00	2010.00	5099.00	22560.00	29669.00	46292.00	16623.00	1622.53	1267.9
8		0.00	2010.00	1710.00	22560.00	26280.00		20012.00	1792.04	1387.7
9		0.00	2010.00	1769.00	22560.00	26339.00		19953.00	1639.23	1257.8
Ó		0.00	2010.00		22560.00	24570.00		21722.00	1637,21	1244.8
1		0.00	2010.00	0.00	22560.00	24570.00		21722.00	1502.03	1131.6
2		0.00	2010.00		22560.00	24570.00		21722.00	1378.01	1028.8
3		0.00	2010.00	0.00		24570.00		21722.00		935.2
4		0.00	2010.00	0.00	22560.00	24570.00	46292.00	21722.00	1159.84	850.2
	2021	0.00	2010.00	0.00	22560.00	24570.00	46292.00	21722.00	1064.07	772.9
6		0.00	2010.00	1710.00	22560.00	26280.00	46292,00	20012.00	899.37	647.3
7		0,00	2010.00	3190.00	22560.00	27760.00	46292.00	18532.00		545.0
8	4.4	0.00	2010.00	0.00	22560.00	24570.00	46292.00	21722.00	821.66	580.7
9		0.00	2010.00	0.00	22560.00	24570.00		21722.00	753.82	527.9
0		0.00	2010.00	0.00	22560.00	24570.00		21722.00	691.58	
.1		0.00	2010.00	0.00		24570.00		21722.00	634.47	436,3
2		0.00	2010.00		22560.00	24570.00		21722.00	582.09	396.6
3		0.00	2010.00	0.00		24570.00		21722.00	534.02	360.5
4		0.00	2010.00			26280.00		20012.00	451.36	302.0
5		0.00	2010.00	1769.00	22560.00	26339.00	the contract of the contract o	19953.00	412.87	273.7
6	* 2	0.00	2010.00	0.00		24570.00		21722.00	412.36	270.9
7	2033	0.00	2010.00			29669.00		16623.00	289.51	188.4
8	2034	0.00	2010.00			24570.00		21722.00	347.08	223.9
	2035	0.00	2010.00			24570.00		21722.00	318.42	
	2036	0.00	2010.00			24570.00		21722.00	292.13	
1		0.00	2010.00	0.00	22560.00	24570.00		21722.00	268.01	
	2038	0.00	2010.00	1710.00	22560,00	26280.00	46292,00 2023800,00	20012.00	226.52	140.8

INTERNAL RATE OF RETURN(IRR) = 9 + 11950.70 / ( 11950.70 + 1490.65 ) = 9.9 %

141952.00

TOTAL

92460.00 30724.00 997410.00 1262550.00 2023800.00

-1490.65

761250.00

## TABLE N.1.7(2) SENSITIVITY ANALYSIS (ALTERNATIVE A-1)

## (2) A 10% reduction in production

(UNIT : THOUSAND RDS) ************ ----- PROJECT COSTS ------ PRESENT WORTH VALUE ----- DISCOUNT RATE ----PRODUC+ YEAR CONSTRUC-O & M REPLACE-INCREMENTAL PROJECT COSTS MENT COSTS TION COSTS TOTAL TION COSTS BENEFIT RETURN ( 8 % ) (9 % ) -----2645.00 0.00 0.00 0.00 2645.00 1 1987 0.00 -2645.00 -2449.07 -2426.61 2 1988 5073.00 0.00 0.00 0.00 5073.00 0.00 -5073.00 -4349.28 -4269.84 0.00 0.00
0.00 0.00
0.00 0.00
0.00 0.00
2010.00 0.00
2010.00 0.00
2010.00 0.00
2010.00 0.00
2010.00 0.00 3 1989 14930.00 0.00 0.00 0,00 14930.00 0.00 -14930.00 -11851.90 -11528.70 0.00 37607.00 4 1990 37607.00 0.00 -37607.00 -27642.30 -26641.70 0.00 45419.00 45419.00 -30911.40 5 1991 0.00 -45419.00 -29519.20 0.00 23366.00 6 1992 23366.00 0.00 -23366.00 -14724.50 -13932.40 15835.00 17845.00 25817.00 7 1993 0.00 7972.00 4651.59 4360.96 25817.00 0.00 15835,00 17845.00 8 1994 7972.00 4307.02 4000.88 17845.00 0.00 15835.00 25817.00 7972.00 ġ. 1995 3987.99 3670.53 15835.00 17845.00 25817.00 7972.00 10 1996 0.00 3692.58 3367.46 15835.00 17845.00 11 1997 0.00 25817.00 7972.00 3419.05 3089.41 2010.00 1710.00 15835.00 19555.00 25817.00 12 1998 0.00 6262.00 2486.73 2226,36 2010.00 1769.00 22560.00 26339.00 1999 0.00 41663.00 15324.00 5634.60 4998.36 13 2000 0.00 2010.00 0.00 22560.00 24570.00 41663.00 17093.00 5819.50 5115.02 14 0.00 22560.00 24570.00 41663.00 17093.00 15 2001 0.00 2010.00 5388.43 4692.68 2010,00 0.00 2010.00 0.00 2010.00 0.00 2010.00 0.00 2002 0.00 2010,00 22560.00 24570.00 41663.00 17093.00 4989.29 4305.21 16 22560,00 24570.00 41663.00 17093.00 4619.71 17 2003 0.00 3949,73 22560.00 24570.00 41663.00 4277.51 18 2004 0.00 17093.00 3623.61 24570.00 22560.00 41663.00 17093.00 3960.66 0.00 1710.00 3324.41 19 2005 2006 0.00 2010.00 22560.00 26280.00 41663.00 15383.00 3300.40 2744.80 20 41663.00 15324.00 21 2007 0.00 2010.00 1769.00 22560.00 26339.00 3044.20 2508.51 0.00 22560.00 24570.00 41663.00 17093.00 3144.10 22 2008 0.00 2010,00 2567.05 2010.00 0.00 22560.00 24570.00 41663.00 17093.00 2911.20 2355, 10 23 2009 0.00 0.00 0.00 0.00 24 2010 0.00 2010.00 22560.00 24570.00 41663.00 17093.00 2695,56 2160.64 25 2011 0.00 2010.00 22560.00 24570.00 41663.00 17093.00 2495,88 1982.24 22560.00 41663.00 17093.00 2311.00 1818.57 2010.00 24570.00 26 2012 0.00 2010.00 5099.00 22560.00 29669.00 41663.00 11994,00 1501.49 1170.71 2013 27 0.00 41663,00 15383.00 1783.10 1377.52 2014 0.00 2010.00 1710.00 22560.00 26280.00 28 41663.00 15324.00 1644.69 1258.93 29 2015 0.00 2010.00 1769.00 22560.00 26339.00 1698,66 1288.32 2010.00 0.00 22560.00 24570.00 41663.00 17093.00 30 2016 0.00 0.00 2010.00 22560.00 24570.00 41663.00 17093.00 1572.83 1181.94 31 2017 0.00 17093.00 1456.33 1084.35 2010.00 0.00 22560.00 24570.00 41663.00 32 2018 0.00 0.00 22560.00 24570.00 41663.00 17093.00 1348.45 994.82 33 2019 0.00 2010.00 2010,00 0.00 2010,00 0.00 2010,00 1710.00 41663.00 17093.00 1248.56 912.68 22560.00 24570.00 34 2020 0.0022560.00 24570.00 41663.00 17093.00 1156.08 837.32 0.00 35 2021 15383.00 963.35 691.33 26280.00 41663.00 22560.00 36 2022 0.00 3190.00 22560.00 27760.00 41663.00 13903.00 806.18 573.23 2010.00 37 2023 0.00 646.56 2010.00 0.00 22560.00 24570.00 41663.00 17093.00 917.73 38 0.00 0.00 0.00 2024 17093.00 849.75 593.18 22560.00 24570.00 41663.00 39 2025 0.00 2010.00 41663.00 17093.00 786.81 544.20 22560.00 24570.00 2010.00 0.00 0.00 0.00 40 2026 0.00 22560.00 24570.00 41663,00 17093.00 728.53 499,27 41 2027 0,00 2010,00 0.00 674.56 22560.00 24570.00 41663.00 17093.00 458.04 2010.00 42 2028 0.00 17093.00 624.59 420,22 41663.00 2029 2010.00 22560.00 24570.00 0.00 43 520.47 346.96 26280.00 41663.00 15383.00 22560.00 44 2030 0.00 2010.00 1710.00 480.07 317.09 22560.00 26339.00 41663.00 15324,00 2010.00 1769.00 45 2031 0.00 495.82 324.49 22560.00 24570.00 41663.00 17093,00 2010.00 0.00 0.00 46 2032 11994.00 322.14 208.89 41663.00 5099.00 22560.00 29669.00 47 2033 0.00 2010.00 0.00 425.09 273.12 41663.00 17093.00 24570.00 2010.00 22569.00 48 2034 0.00 393.60 250.56 41663.00 17093.00 22560.00 24570.00 2035 0.00 2010.00 0.00 49 229,88 41663.00 17093.00 364.44 22560.00 24570.00 0.00 2010.00 50 2036 0.00 210.90 41663.00 17093.00 337.45 24570.00 0.00 22560.00 2010.00 51 2037 0.00 174.13 15383.00 281.19 26280.00 41663.00 22560.00 2010,00 1710.00 52 2038 0.00 571788.00 8590.45 -4588.40 1821420.00 997410.00 1249630.00 30724.00 129040.00 92460,00 TOTAL

INTERNAL RATE OF RETURN(IRR) = 8 + 8590.45 / (8590.45 + 4588.40) = 8.7 %

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## TABLE N.1.7(3) SENSITIVITY ANALYSIS (ALTERNATIVE A-1)

. 4444		******	10 m (4 ex 40 to m = 10 to				******	(UNIT : THOU	JSAND ROS1
		PROJECT COS	7\$					- PRESENT WOR	KIN: VALUE
YEAR	CONSTRUC- TION COSTS	O & M COSTS	REPLACE - MENT COSTS	PRODUC- TION COSTS	TOTAL	INCREMENTAL BENEFIT	PROJECT RETURN		nana. Maria da 1860
1987	2917.00	0.00	0.00	0.00	2917.00	0.00	-2917.00	-2726.17	-2700.9
1988	5580.00	0.00	0,00	0.00	5580.00	0.00	-5580.00	-4873.79	4783.9
1989	16423.00	0.00	0.00	0.00		0.00	-16423.00		-13037.1
1990	41368.00	0.00	0.00	0.00	41568.00	0.00		-31559.50	-30406.70
1991	49961.00	0.00 0.00	0,00	0.00	49961.00		~49961.00	-35621,50 -17127,00	-34002.6
1992 1993		2010.00	0.00	0.00 15835.00	25703.00 17845.00	0.00 25817.00		4964.56	-16197,3
1994	0.00 0.00	2010.00	0,00	00.750C)	17845.00	25817.00		4639.78	
1995	0.00	2010.00	0.00	15835.00	17845.00	25817.00	7072.00	4337.10	3987.9
1996	0.00	2010.00	0.00	15835 00	17845.00		7972.00	4336.24 4052.56	3692.5
1997	0.00	2010.00	0.00	15835.00		25817.00	7972.00	3787.44	3419.0
1998	0.00	2010.00	1710.00	15835.00		25817.00	6262.00	2780.40	2486.7
1999	0.00	2010.00	1769.00	22560.00		41663.00	15324.00	6358,92	5634.6
2000	0.00	2010.00	በ በበ	22560 00		41663.00	17093.00	6628.96	5819.5
2001	0.00	2010.00	0.00	22560.00	24570,00	41663.00	17093.00		5388,4
2002	0.00	2010.00	0.00	22560.00	24570.00	41663.00	17093.00		4989.2
2003	0.00	2010.00	0.00	22560.00	24570.00	41663.00	17093.00	5411.21	4619.7
2004	0.00	2010.00	0.00	22560.00	24570.00	41663.00	17093.00	5057.20	
2005	0.00		0.00		24570.00	41663.00		4726.36	
2006	0.00	2010.00	1710.00	22560.00		41663.00	15383.00	3975.26	3300.4
2007	0.00	2010.00	1769.00	22560.00	26339.00	41663.00		3700.95	
2008	0.00	2010.00	0.00	22560.00		41663.00	17093.00	3858.12	3144.1
2009	0.00		0.00	22560.00	24570.00	41663.00	17093.00	3605.72	2911.2
2010	0.00	2010.00	0.00	22560.00	24570.00	41663.00	17093.00	3369.83 3149.37	2695.5
2011	0.00	2010.00	0.00 0.00	22560.00 22560.00	24570.00	41663.00 41663.00	17093,00 17093,00	2943.34	2495.8 2311.0
2012	0.00	2010.00	5099.00	22560.00	24570.00 29669.00		11994.00	1930.20	1501.7
2013 2014	0.00 0.00	2010.00	1710.00	22560.00	26280.00	41663.00	15383.00	2313.64	1783.1
2014 2015	0.00	2010.00	1769.00	22560.00	26339.00		15324,00		1644.6
2016	0.00	2010.00	0.00	22560.00	24570.00	41663.00	17093.00	2245.46	1698.6
2017	0.00	2010.00	0.00		24570.00	41663.00		2098.56	
2018	0.00		0.00	22560.00	24570.00	41663.00	17093.00	1961.27	1456.3
2019	0.00	2010.00	0.00		24570.00		17093.00	1832.96	
2020	0.00	2010.00	0.00	22560.00	24570.00	41663.00		1713.05	1248.5
2021	0.00	2010.00	0.00	22560.00	24570.00	41663.00	17093.00	1600.98	1156.0
2022	0.00	2010.00	1710.00	22560.00	26280.00	41663.00	15383.00	1346.56	963,3
2023	0.00	2010.00	3190.00	22560.00	27760.00	41663.00	13903.00	1137.39	806.1
2024	0.00	2010.00	0.00	22560.00	24570.00	41663.00	17093,00	1306.88	917.7
2025	0.00	2010.00	0.00	22560.00	24570.00	41663.00	17093.00		849.7
2026	0.00	2010.00	0.00	22560,00	24570.00	41663.00	17093,00	1141.48	785.8
2027	0.00	2010.00	0.00	22560.00	24570.00	41663.00	17093.00	1066.80	728.5
2028	0.00	2010.00	0.00	22560.00		41663.00	17093.00	997.01	674.5
2029	0.00	2010.00	0.00	22560.00	24570.00	41663.00	17093.00	931.79	624.5
2030	0.00	2010.00	1710.00	22560.00	26280.00	41663.00	15383.00	783.71	520.47
2031	0.00	2010.00	1769.00	22560.00	26339.00	41663.00	15324.00 17093.00	729.63 760.62	480.0 495.8
2032	0.00	2010.00	0.00	22560.00	24570.00	41663.00 41663.00	11994.00	498.80	322.1
2033	0.00 0.00	2010,00	5099.00 0.00	22560.00 22560.00	29669.00 24570.00	41663.00	17093.00	664.35	425.09
2034	0.00	2010.00 2010.00	0.00	22560.00	24570.00	41663.00	17093.00	620.89	393.6
2035 2036	0.00	2010.00	0.00	22560.00	24570.00		17093.00	580.27	the second of the second
2037	0.00	2010.00		22560.00	24570.00		17093.00	210 74	337.49
2038	0.00	2010.00		22560.00		41663.00	15383.00	456.13	
というり	0.00	4010.00	1110.00	EC-100-00	FATOR 600	1821420.00	,,,,,,,,,,,		201.17

INTERNAL RATE OF RETURN(IRR) = 7 + 16653.60 / ( 16653.60 + 609.63 ) = 8.0 %

TABLE N.1.7(4) SENSITIVITY ANALYSIS (ALTERNATIVE B-I)

(1) A 10% increse in construction cost

(UNIT : THOUSAND RDS)

	. <b></b>	9	PROJECT COS	: T\$ - <b>-</b>			,		- PRESENT WOR	TH VALUE -
	JEAR.				BRADU-				DISCOUNT	RATE
	'EAR	CONSTRUC- TION COSTS	O & M COSTS		PRODUC- TION COSTS	TOTAL	INCREMENTAL BENEFIT	PROJECT		(13 %)
1	1987	2910.00	0.00	0.00	0.00	2910.00		-2910.00	-2598,21	-2575.22
2	1988	5506.00	0.00	0.00	0.00	5506.00	0.00	-5506:00	-4389.35	-4312.01
3	1989	11448.00	0.00	0.00	0.00	11448.00	0,00	-11448.00	-8148.46	-7934.04
4	1990	31139.00		0.00	0.00	31139.00	0.00	-31139.00	19789.40	19098,10
5	1991	36908.00	0.00	0.00	0.00	36908.00	0.00	-36908,00	-20942.60	-20032.20
6	1992	13642.00	0.00	0.00	0.00	13642.00		-13642.00	-6911.47	-6552.51
7	1993	0.00	1261.00	0.00	13869.00	15130.00	26187.00	11057.00	5001.63	4699.90
8	1994	0.00	1261.00	0.00	13869.00	15130.00	26187,00	11057.00	4465.74	4159.20
9	1995	0.00	1261,00	0.00	13869.00		26187.00	11057.00	3987:27	3680.71
10	1996	0.00	1261.00	0.00	13869.00	15130.00	26187.00	11057.00	3560.06	3257.26
11	1997	0.00	1261.00	0.00	13869.00	15130.00	26187.00	11057.00	3178.63	2882,53
12	1998	0.00	1261.00	1710.00	13869.00	16840.00	26187,00	9347.00	2399.14	2156.41
13	1999	0.00	1261.00	1769.00	20214.00	23244.00		19709.00	4516.80	4023.88
	2000	0.00	1261.00	0.00	20214.00	21475.00	42953.00	21478.00	4394.83	3880.57
15	2001	0.00	1261.00	0.00	20214.09	21475.00	42953.00	21478.00	3923.96	3434,13
- 16	2002	0,00	1261.00	0.00	20214.00	21475.00	42953.00	21478.09	3503.53	3039.06
17	2003	0.00	1261.00	0.00	20214.00	21475.00		21478.00	3128.15	2689.43
18	2004	0.00	1261.00	0.00	20214.00	21475.00	42953.00	21478.00	2793.00	2380.03
19		0,00	1261.00	0.00	20214.00	21475.00		21478.00	2493.75	2106.22
20	2006	0.00	1261.00	1710.00	20214.00	23185.00		19768.00	2049.29	1715.51
21	2007	0.00	1261.00	1769.00	20214.00	23244.00	42953.00	19709.00	1824.26	1513.62
22	2008	0.00	1261.00	0.00	20214.00	21475.00	42953.00	21478.00	1775.00	1459.72
23	2009	0.00	1261.00	0.00	20214.00	21475.00	42953.00	21478.00	1584.82	1291.78
24		0.00	1261.00	0.00	20214.00	21475.00	42953.00	21478.00	1415.02	1143.17
25	2011	0.00	1261.00			21475.00	42953,00	21473.00	1263,41	1011.66
26	2012	0.00	1261.00	0.00	20214.00	21475.00	42953.00	21478.00	1128.04	895.27
. 27	2013	0.00	1261.00	2005.00	20214.00	23430.00	42953.00	19473,00	913.16	718.32
28	2014	0.00	1261.00	1710,00	20214.00	23185.00	42953.00	19768.00	827.67	645.31
29	2015	0.00	1261.00	1769.00	20214.00	23244.00	42953.00	19709.00	736.79	569.36
	2016	0.00	1261.00		20214.00	21475.00	42953.00	21476.09	716.89	549.09
- 31	2017	0.00	1261.00	0.00	20214.00	21475.00	42953.00	21478.00	640.08	485.92
	2018	0.00	1261.00	0.00	20214.00	21475.00	42953:00	21478.00	571.50	430.02
. 33.	2019	0.00	1261.00	0.00	20214.00	21475.00		21478.00	510.27	380.54
34	2020	0.00	1261.00	0.00	20214.00	21475.00	42953.00	21478.60	455.60	336.77
35	2021	0.00	1261.00	0.00	20214.00	21475.00	42953.00	21476.00	406.79	298.02
36	2022	0.00	1261.00	0.00	20214.00	21475.00	42953.00	21478.00	363.20	263.74
37	2023	0.00	1261.00	3022.00	20214.00	24497.00	42953.00	18456.00	273.66	200.56
38	2024	0.00	1261.00	0.00	20214.00	21475.00	42953,00	21478.00	289,54	206.54
39	2025	0.00	1261.00	0.00	20214.00	21475.00	42953.00	21476.00	258.52	182,78
40	2026	0.00	1261.00	0.00	20214.00	21475.00	42953.00	21475.00	230.82	161.75
41	2027	0.00	1261.00	0.00	20214.00	21475.00	<b>42953</b> .00	21478.00	<b>206.09</b>	143.15
42	2028	0.00	1261,00	0.00	20214.00	21475.00	42953.00	21478.00	184.01	126. <i>6</i> 8
43	2029	0.00	1261.00	0.00	20214.00	21475.00	42953.00	21478.00	164.29	112.10
44	2030	0.00	1261.00	1710.00	20214.00	23135.00	42953.00	19768.00	135.01	91.31
45	2031	0.00	1261.00	1769.00	20214.00	23244.00	42953.00	19709.00	120.19	
46	2032	0.00	1261.00	0.00	20214.00	21475.00		21476.00	116,94	77.69
47	2033	0.00	1261.00	2005.00	20214.00	23480.00	42953.00	19473.00	94.66	62.34
. 48	2034	0.00	1261.00	0.00	20214.00	21475.00	42953.00	21478.00	93.22	60.85
49	2035	0.00	1261.00	0.00		21475.00	42953.00	21478.00	83.24	53.85
50	2036	0.00	1261.00	0.00	20214.00	21475.00	42953.00	21478.00	74.32	47.65
51	2037	0.00	1261.00	0.00	20214.00		42953.00	21473.00	66.36	42.17
52	2038		1261.00	1710.00	20214.00	23185.00	42953.00	19768.00	54.53	34.35
1	OTAL	101553.00	58006.00	22658.00	891774.00	1073990.00	1875240.00			-2722.65
		والمستشيد								

INTERNAL RATE OF RETURN(IRR) = 12 + 4199.19 / ( 4199.19 + 2722.65 ) = 12.6 %

TABLE N.1.7(5) SENSITIVITY ANALYSIS (ALTERNATIVE B-I)

(2) A 10% reduction in production

(UNIT: THOUSAND RDS)

			PROJECT COS	1\$	•				- PRESENT WOR	
Y	'EAR	CONSTRUC- TION COSTS	COSTS	REPLACE - MENT COSTS	PRODUC- TION COSTS	TOTAL	INCREMENTAL BENEFIT	PROJECT	(11 %)	( 12 % )
1	1987	2645.00	0.00	0.00	0.00	2645.00		-2645,00	-2382.88	-2361.61
2	1988	5005.00	0.00	0.00	0.00	5005.00		-5005.00	-4062,17	-3989.95
3	1989	10407.00	0.00	0.00	0.00	10407.00	0.00	-10407.00	-7609.51	-7407.50
4	1990	28308.00	0.00	0.00	0.00	28308.00	0.00	-28308.00	and the second of the second	-17990.30
5.				0.00	0.00	33553.00	0.00	-33553.00	-19912.10	-19038.90
	1992	12402.00	0.00	0.00	0.00	12402.00	0.00	-12402.00	-6630,62	
7		0.00	1261.00	0.00	13869.00	15130.00	23568,00		4064.24	3816.93
. 8	1994	0.00	1261.00	0.00	13869.00	15130.00	23568.00		3661.47	3407.97
9	1995	0.00		0.00	13869.00	15130.00	23568.00	8438.00	3298.63	3042.83
		0.00	1261,00	0.00	13869.00	15130.00	23568.00	8438.00	2971.73	2716.81
11	1997	0.00	1201.00	0.00	13869.00	15130.00	23568.00	8438.00	2677.24	2425.73
12	1998	0.00	1261.00	1710.00	13869.00	16840.00	23568.00	6728.00	1923.14	1726.91
13	1999	0.00	1261.00	1769.00	20214.00	23244.00	38658.00	15414.00	3969.33	3532.50
14	2000	0.00	1261.00	0.00	20214.00		38658.00	17183.00	3986.37	3515.99
15	2001	0.00	1261.00		20214.00	21475.00	38658.00	17183.00	3591.32	3139.28
16	2002	0.00	1261.00	0.00	20214.00	21475.00	33658.00	17183.00	3235.43	2802.92
17		0.00	1261.00	0.00	20214.00		38658.00	17183.00	2914.80	2502.61
18	2004	0.00	1261.00	0.00	20214.00	21475.00	38658.00		2625.95	2234.47
19	2005	0.00	1261.00	0.00		21475.00	38658.00	17183.00	2365.72	1995.07
20	2006	0.00	1261.00	1710,00	20214.00	23185.00	38658.00	15473.00	1919.18	1604.04
21	2007	0.00	1261.00	1769.00	20214.00		38658.00	15414.00	1722.40	1426.72
22	2008	0.00	1261.00	0.00	20214.00	21475.00	38658.00	17183.00	1729.79	
23	2009	0.00	1261.00	0.00	20214.00	21475.00	38658.00	17183.00		1267.90
24	2010		1261.00	0.00	20214.00	21475.00	38658.00	17183.00		1132.05
25	2011	0.00	1261.00		20214.00	21475,00		17183.00	1264.81	1010.76
26	2012	0.00	1261.00	0.00	20214.00		38658.00	17183.00	1139.47	902.47
27	2013	0.00	1261.00	2005.00	20214.00	23480 00	38658.00	15178.00	906.77	711.75
28	2014	0.00	1261.00	1710.00	20214.00		38658.00	15473.00	832.78	647.85
29	2015	0.00	1261.00	1769.00	20214.00	23244.00	38658.00	15414.00	747.39	
30	2016	0.00	1261.00	0.00	20214.00	21475.00	33658.00	17183.00	750.60	573.54
31	2017	0.00	1261.00	0.00	20214.00	21475.00	38658.00	17183.00	676.22	512.09
32	2018	0.00	1261.00	0.00	20214.00	21475.00	38658.00		609.21	457.22
33	2019	0.00	1261.00	0.00	20214.00	21475.00		17183.00 17183.00	548.84 494.45	408,23 364,49
34	2020	0.00	1261.00	0.00		21475.00	38658.00	and the second second	445.45	325.44
35	2021	0.00	1261.00		20214.00		38658.00			
50	2022	0.00	1261.00	0.00	20214.00	21475.00	38658.00	17183.00	. :401.50	290.57
37	2023	0.00	1261.00	3022.00	20214.00	24497.00	38658.00	14161,00	297.95	213.81
38	2024	0.00	1261.00	0.00	20214.00	21475.00	38658.00	17183.00 17183.00	325,71	231.64
39	2025	V.00	1261.00		20214.00	21475.00	38658.00		293.43	206.62
40	2026	0.00	1261.00	0.00	20214.00	21475.00		17183.00	264.35	
41		0.00	1261.00		20214:00	21475.00	38658.00	17183.00	238.15	164_88 147,21
42	2028	0.00	1261.00	0.00	20214.00	21475.00		17183,00	214.55 193.29	
43	2029	0.00	1261.00	0.00	20214.00	21475.00	38658.00	17183.00		131,44 105,68
44		0.00	1261.00	1710.00	20214.00	23185.00 23244.00	38558.00	15473.00 15414.00	156.81 140.73	
45	2031	0.00	1261.00	1769.00	20214.00			17183.00	141.33	93.5ò
46		0.00	1261.00	00.0		21475.00	38658.00 38658.00	15178.00	112.47	73,79
47	2033	0.00	1261.00	2005.00	20214.00 20214.00	23480.00 21475.00	38658.00	17183.00	114.71	74.56
	2034	0.00	1261.00	0.00		21475.00	38658.00	17183.00	103.34	66.59
49	2035	0.00	1261.00	0.00	20214.00 20214.00	21475.00	38658.00	and the second second	93.10	
50	2036	0.00	1261.00	0.00 0.00		Carrier Control of the Control of th			83.87	
51	2037	0.00	1261.00		20214.00	21475.00			68.04	
	2038 Otal	0.00 92320.00	1261.00	1710.00 22658.00	20214.00	23185,00	38658.00		2033.53	42,00 4636,16
	111 01	72,520,00	58006.00	2,2000.00	391114.00	1004700.00	1687730.00	022770.00	2033.33	4000,10

INTERNAL RATE OF RETURN(IRR) = 11 + 2033.53 / ( 2033.53 + 4636.16 ) = 11.3 %

TABLE N.1.7(6) SENSITIVITY ANALYSIS (ALTERNATIVE B-1)

(3) A combination of (1) and (2)

(UNIT : THOUSAND RD\$) ----- PROJECT COSTS ------ PRESENT WORTH VALUE ----- DISCOUNT RATE ----YEAR CONSTRUC-O & M REPLACE-PRODUC-INCREMENTAL PROJECT TION COSTS COSTS MENT COSTS TION COSTS TOTAL BENEFIT RETURN ( 10 %)  $\{11 \%\}$ ------1 1987 2910.00 0.00 0.00 0.00 2910,00 0.00 -2910.00 -2645.45 -2621,62 2 1988 0.00 5506.00 0.00 0.00 5506.00 0.00-5506.00 -4550.41 -4468.79 3 1989 11448.00 0.00 0.00 0.0011448.00 0.00 -11446.00 -8601.05 -8370.68 4 1990 31139.00 0.00 0.00 0.0031139.00 90.0 -31139.60 ~21268.40 -20512.20 0.00 0.00 5 1991 36908.00 0.00 36908.00 0.00 -36908.00 -22917.00 -21903,10 0.00 0.00 6 1992 13642.00 0.00 13642.00 0.00~13642.00 ~7700.55 -7293.57 7 1993 0.00 1261.00 0.00 13869.00 15130.00 23568.00 8438.00 4330.03 4064.24 13869.00 15130.00 8 1994 0.001261.00 0.00 23568.00 8438.00 3936.39 3651.47 1995 0.001261.00 0.00 13869.00 15130.00 23568.00 9 8438.00 3578.54 3298.63 10 1990 0.00 1261.00 0:00 13669.00 15130.00 23568.00 8438.00 3253.21 2971.73 11 1997 0.00 1261.00 0.00 13869.00 15130.00 23568.00 8438.00 2957.47 2677.24 12. 1998 0.00 1261.00 1710.00 13859.00 16840.00 23563.00 6728.00 2143.75 1923.14 23244.00 13 1999 1261,00 1769.00 20214.00 38658.00 15414.00 0.904464.89 3969.33 1261.00 0.00 29214.00 21475.00 38658.00 17183.00 4524.82 2000 0.0014 3986.37 21475.00 15. 2001 1261.00 0.00 20214.00 38658.00 17183.00 4113.47  $0.\hat{u}0$ 3591.32 20214.00 21475.00 38658.00 17183.00 16 2002 0.00 1261.00 0.00 3739.52 3235,43 17 2003 0.00 1261.00 0.00 20214.00 21475.00 38658.00 17183,00 3399.57 2914.80 21475.00 38658.00 17163.00 18 2004 0.00 1261.00 0.0020214.00 3090.51 2625.95 19 2005 0.00 1261.00 0.00 20214.00 21475.00 38658.00 17183.00 2809.56 2365.72 15473.00 23185.00 20 2006 0.00 1261.00 1710,00 20214.00 38658.00 2299.96 1919.18 21 2007 1261.00 1769.00 20214.00 23244.00 38658.00 15414.00 2082.90 0.00 1722.40 21475.00 17183.00 22 2008 0.00 1261.00 0.0020214.00 38658.00 2110.86 1729.79 23 20214.00 21475.00 38658.00 17183.00 1918.97 2009 0.00 1261.00 0.00 1558.37 21475.00 17183.00 24 2010 0.00 1261.00 0.00 20214.00 38658.00 1744.51 1403.94 21475.00 25 20214.00 38658.00 17183.00 1585.92 1264.81 2011 0.001261.00 0.0020214.00 21475.00 38658.00 17183.00 1441.75 1139.47 2012 0.00 1261.00 0.00 26 2005.00 20214.00 0.00 1261,00 23480.00 38658.00 15178,00 1157.74 906.77 27 2013 23185.00 15473.00 1072.95 832,76 28 2014 0.001261.00 1710,00 20214.00 38658.00 23244.00 38658.00 15414.00 971.69 747.39 29 2015 0.00 1261.00 1769.00 20214.00 17183.00 984.73 750.60 0.00 1261.00 0.00 20214.00 21475.00 38658.00 30 2016 17183.00 895.21 676.22 20214.00 21475.00 38658.00 31 2017 0.001261.00 0.00 20214.00 17183.00 813.83 609.21 21475.00 38658.00 1261.00 0.0032 2013 0.0021475.00 38658.00 17183.00 739.85 548.84 1261.00 0.00 20214.00 33 2019 0.000.00 20214.00 21475.00 38658.00 17183.00 672.59 494.45 34 2020 0.00 1261.00 445.45 35 2021 0.001261.00 0.00 20214.00 21475.00 38658.00 17183.00 611.44 401.30 36 2022 0.001261.00 0.00 20214.00 21475.00 38658.00 17183.00 555.85 297.95 14161.00 37 1261.00 3022.00. 20214.00 24497.03 38658.00 416.45 2023 0.00 17183.00 459.39 325.71 38658.00 38 0.00 1261.00 0.00 20214.00 21475.00 2024 17183.00 417.62 293.43 21475.00 38658.00 39 20214.00 2025 0.00 1261.00 0.00 20214.00 21475.00 38658.00 17183,00 379.66 264.35 1261.00 0.00 40 2026 0.00 21475.00 38658.00 17163.00 345.14 238.15 1261.00 20214.00 0.00 0.00 41 2027 17183.00 313.77 214.55 1261.00 29214.00 21475.00 38658.00 0.00 42 2028 0.0017183.00 285.24 193.29 38658.00 1261.00 0.00 20214.00 21475.00 43 2029 0.00 15473.00 233.51 156.81 38658.00 44 2030 0.00 1261.00 1710.00 20214.00 23185.00 15414,00 211,47 140.73 38658.00 23244.00 45 2031 0.00 1261.00 1769.00 20214.00 17183.00 214.31 141.33 21475.00 38658.00 20214.00 46 2032 0.00 1261.00 0.00 15178.00 172.09 112.47 20214.00 23480.00 38658.00 2005.00 47 2033 0.00 1261.00 114.71 20214.00 21475.00 38658.00 17183.00 177.11 1261.00 0.00 0.0048 2034 105.34 0.00 21475.00 38658,09 17183.00 161.01 20214.00 49 2035 0.00 1261.00 146.37 93.10 17183.00 20214.00 21475.00 38658.00 90.0 1261.00 0.00 50 2036 83.87 17183.00 133.07 38658.00 0.00 20214.00 21475.00 51 2037 0.00 1261.00 108.93 68,04 38658.00 15473.00 23185.00 1710.00 20214.00 52 2038 0.00 1261.00 -3891.86 1687730.00 613737.00 4494.83 1073990.00 101553.00 58006.00 22658.00 891774.00 TOTAL _____ -------

INTERNAL RATE OF RETURN(IRR) = 10 + 4494.83 / 1 4494.83 + 3891.86 ) = 10.5 %

TABLE N.2.1 BALANCE OF AGRICULTURAL HOUSEHOLD ECONOMY (WITHOUT PROJECT)

	- WITHO	OUT PROJECT -	REMARKS
AREA OF PARCELATION	ha	2.5	
HARVESTED AREA	ha	2.5	MEAN
GROSS FARM INCOME	RD\$	4,423	
1) RICE PRODUCTION	t	6.25	2.5t/ha
2) VALUE OF PRODUCTION	RD\$	4,423	
PRODUCTION COST			
1) SEED	RD\$	270	
2) FERTILIZER AND	RD\$	357	
AGROCHEMICALS  3) WAGE	RD\$	280	
4) MACHINERY	RD\$	1,000	RD\$400/ha
5) DRAFT ANIMAL	RD\$	75	
6) WATER CHARGE	RD\$	63	RD\$ 25/ha
7) OTHERS	RD\$	100	
8) INTEREST OF CREDIT	RD\$	174	
TOTAL	RD\$	2,319	
FARM INCOME	RD\$	2,104	
NON-AGRICULTURAL INCOME	RD\$	2,288	
AGRICULTUAL HOUSEHOLD INCOME	RD\$	4,392	£.,
LIVING EXPENCE	RD\$	4,392	
SURPLUS OF HOUSEHOLD ECONOMY	RD\$	0	

NUMBER OF FAMILY: 5 PERSONS FAMILY LABOR FORCE: 2 PERSONS

LABOR DAYS OF FAMILY: 139 DAYS
FARM INCOME PER ha: 950 RD\$
PRODUCTION COST PER ha: 820 RD\$

TABLE N.2.2 REVENUE AND EXPENDITURE OF MODEL SETTLER (MODEL 1 R)

erikan di kacamatan di Kabupatèn Barangan Kabupatèn Barangan Kabupatèn Barangan Kabupatèn Barangan Kabupatèn Kabupatèn Barangan B		- WITH PR	OJECT -	·
	ME	DIUM TERM	LONG TERM	REMARKS
AREA OF PARCELATION	ha	2.5	2.5	
HARVESTED AREA	ha	5.0	5.0	DOUBLE CROPPING
GROSS FARM INCOME	RD\$	13,446	17,692	DOODED CHOTTING
1) RICE PRODUCTION	t	19	25	÷
2) VALUE OF PRODUCTION	RD\$	13,446	17,692	707.7 RD\$ / t
PRODUCTION COST				
1) SEED	RD\$	215	215	
2) FERTILIZER AND	RD\$	2,055	2,420	· ·
AGROCHEMICALS  3) WAGE	RD\$	1,200	1,280	
4) MACHINERY	RD\$	1,050	1,165	
5) DRAFT ANIMAL	RD\$	240	240	
6) WATER CHARGE	RD\$	200	200	80 RD\$ / ha
7) OTHERS	RD\$	227	263	00 NOQ 7 Na
8) INTEREST OF CREDIT	RD\$	422	469	17 % / 6 months
TOTAL	RD\$	5,609	6,252	
FARM INCOME	RD\$	7,837	11,440	
NON-AGRICULTURAL INCOME				
AGRICULTUAL HOUSEHOLD INCOME				
LIVING EXPENCE	RD\$	4,392	4,392	
SURPLUS OF HOUSEHOLD ECONOMY	RD\$	3,445	7,048	

NUMBER OF FAMILY: 5 PERSONS FAMILY LABOR FORCE: 2 PERSONS

LABOR DAYS OF FAMILY: MEDIUM TERM 285 DAYS

LONG TERM 300 DAYS

TABLE N.2.3 REVENUE AND EXPENDITURE OF MODEL SETTLER (MODEL 2 R)

		- WITH PRO	OJECT -	
1.	ME	EDIUM TERM	LONG TERM	REMARKS
AREA OF PARCELATION	ha	2.5	2.5	
HARVESTED AREA	ha	5.0	5.0	DOUBLE CROPPING
GROSS FARM INCOME	RD\$	12,031	14,154	
1) RICE PRODUCTION	t	17	20	
2) VALUE OF PRODUCTION	RD\$	12,031	14,154	707.7 RD\$ / t
PRODUCTION COST	•			
1) SEED	RD\$	215	215	
2) FERTILIZER AND	RD\$	1,935	2,295	
AGROCHEMICALS 3) WAGE	RD\$	1,160	1,200	
4) MACHINERY	RD\$	1,050	1,165	
5) DRAFT ANIMAL	RD\$	240	240	
6) WATER CHARGE	RD\$	200	200	80 RD\$ / ha
7) OTHERS	RD\$	215	251	
8) INTEREST OF	RD\$	408	452	17 % / 6 months
CREDIT	٠.			
TOTAL	RD\$	5,423	6,018	
FARM INCOME	RD\$	6,608	8,136	
NON-AGRICULTURAL INCOME				
AGRICULTUAL HOUSEHOLD				
INCOME LIVING EXPENCE	RD\$	4,392	4,392	
SURPLUS OF HOUSEHOLD ECONOMY	RD\$	2,216	3,744	
LCONUITI				

FARMING PATTERN: RICE CULTIVATION WITH FARM MECHANIZATION
NUMBER OF FAMILY: 5 PERSONS FAMILY LABOR FORCE: 2 PERSONS

LABOR DAYS OF FAMILY : MEDIUM TERM 270 DAYS

LONG TERM 285 DAYS

TABLE N.2.4 REVENUE AND EXPENDITURE OF MODEL SETTLER (MODEL 2 R)

	- WITH PROJECT -					
	. 1	MEDIUM TERM	LONG TERM	REMARKS		
AREA OF PARCELATION	ha	2.5	2.5			
HARVESTED AREA	ha	2.5	5.0	DOUBLE CROPPING		
GROSS FARM INCOME	RD\$	6,369	14,154	-		
1) RICE PRODUCTION	.t	9	20	•		
2) VALUE OF PRODUCTION	RD\$	6,369	14,154	707.7 RD\$ / t		
PRODUCTION COST						
1) SEED	RD\$	120	215			
2) FERTILIZER AND AGROCHEMICALS	RD\$	842	2,295			
3) WAGE	RD\$	880	1,200			
4) MACHINERY	RD\$	635	1,165			
5) DRAFT ANIMAL	RD\$	162	240	•		
6) WATER CHARGE	RD\$	200	200	80 RD\$ / ha		
7) OTHERS	RD\$	96	251			
8) INTEREST OF CREDIT	RD\$	241	452	17 % / 6 months		
TOTAL	RD\$	3,176	6,018			
FARM INCOME	RD\$	3,193	8,136			
NON-AGRICULTURAL INCOME						
AGRICULTUAL HOUSEHOLD INCOME		•				
LIVING EXPENCE	RD\$	4,392	4,392			
SURPLUS OF HOUSEHOLD ECONOMY	RD\$	-1,199	3,744			

NUMBER OF FAMILY: 5 PERSONS FAMILY LABOR FORCE: 2 PERSONS

LABOR DAYS OF FAMILY : MEDIUM TERM 202 DAYS

LONG TERM 285 DAYS

TABLE N.2.5 REVENUE AND EXPENDITURE OF MODEL SETTLER (MODEL 3 R)

		~ WITH PRO	JECT -	
	M	EDIUM TERM	LONG TERM	REMARKS
AREA OF PARCELATION	ha	2.5	2.5	
HARVESTED AREA	ha	2.5	5.0	DOUBLE CROPPING
GROSS FARM INCOME	RD\$	4,954	11,323	
1) RICE PRODUCTION	ł	7	16	
2) VALUE OF PRODUCTION	RD\$	4,954	11,323	707.7 RD\$ / t
PRODUCTION COST				
1) SEED	RD\$	120	215	
2) FERTILIZER AND	RD\$	842	2,055	
AGROCHEMICALS 3) WAGE	RD\$	. 880	1,240	
4) MACHINERY	RD\$	635	1,050	
5) DRAFT ANIMAL	RD\$	162	240	
6) WATER CHARGE	RD\$	200	200	80 RD\$ / ha
7) OTHERS	RD\$	96	227	00 N/4 / Na
8) INTEREST OF CREDIT	RD\$	241	425	17 % / 6 months
TOTAL	RD\$	3,176	5,652	
FARM INCOME	RD\$	1,781	5,671	
NON-AGRICULTURAL INCOME				
AGRICULTUAL HOUSEHOLD INCOME				
LIVING EXPENCE	RD\$	4,392	4,392	
SURPLUS OF HOUSEHOLD ECONOMY	RD\$	-2,611	1,279	

NUMBER OF FAMILY: 5 PERSONS FAMILY LABOR FORCE: 2 PERSONS

LABOR DAYS OF FAMILY : MEDIUM TERM 202 DAYS

LONG TERM 285 DAYS

TABLE N.2.6 REVENUE AND EXPENDITURE OF MODEL SETTLER (MODEL 4 R)

		- WITH PR	OJECT -	
		EDIUM TERM	LONG TERM	REMARKS
AREA OF PARCELATION	ha	2.5	2.5	
HARVESTED AREA	ha.	2.5	2.5	
GROSS FARM INCOME	RD\$	4,600	5,308	
1) RICE PRODUCTION	t		7.5	
2) VALUE OF PRODUCTION	RD\$	4,600	5,308	707.7 RD\$ / t
PRODUCTION COST	поф	1,000		10111 NOV 7 U
1) SEED	RD\$	120	120	
2) FERTILIZER AND	RD\$	842	1,055	
AGROCHEMICALS  3) WAGE	RD\$	880	920	
4) MACHINERY	RD\$	635	705	
5) DRAFT ANIMAL	RD\$	162	162	
6) WATER CHARGE	RD\$	200	200	80 RD\$ / ha
7) OTHERS	RD\$	96	117	
8) INTEREST OF CREDIT	RD\$	241	269	17 % / 6 months
TOTAL	RD\$	3,176	3,548	
		r.		
FARM INCOME	RD\$	1,424	1,760	
NON-AGRICULTURAL INCOME				
AGRICULTUAL HOUSEHOLD		- '		
INCOME LIVING EXPENCE	RD\$	4,392	4,392	
SURPLUS OF HOUSEHOLD ECONOMY	RD\$	-2,968	-2,632	

NUMBER OF FAMILY: 5 PERSONS FAMILY LABOR FORCE: 2 PERSONS

LABOR DAYS OF FAMILY : MEDIUM TERM 202 DAYS

LONG TERM 215 DAYS

TABLE N.2.7(1) REPAYMENT SCHEDULE OF FOREIGN LOAN (A-I)

Unit: RD\$1,000

Year in Order	Foreign Loan	Accumulated Foreign Loan	Interest Payment	Capital Payment	Total Payment
1	2,391	2,391	120		120
2	4,694	7,085	354		354
3	10,983	18,068	904		904
4	27,842	45,910	2,296		2,296
5	33,517	79,427	3,972		3,972
6	18,625	98,052	4,903		4,903
. 7		98,052	4,903	5,161	10,064
8		92,891	4,645	5,161	9,806
9		87,730	4,387	5,161	9,548
10		82,569	4,129	5,161	9,290
11		77,408	3,870	5,161	9,031
12		72,247	3,612	5,161	8,773
13		67,086	3,354	5,161	8,515
14		61,925	3,096	5,161	8,257
15		56,764	2,838	5,161	7,999
16		51,603	2,580	5,161	7,741
17		46,442	2,322	5,161	7,483
18		41,281	2,064	5,161	7,225
19		36,120	1,806	5,161	6,967
20		30,959	1,548	5,161	6,709
21		25,798	1,290	5,161	6,451
22		20,637	1,032	5,161	6,193
23		15,476	774	5,161	5,935
24		10,515	526	5,161	5,687
25		5,154	258	5,154	5,419
26	**	0	0	o	0

TABLE N.2.7 (2) REPAYMENT SCHEDULE OF FOREIGN LOAN (B-I)

Unit: RD\$1,000

Year in Order	Foreign Loan	Accumulated Foreign Loan	Interest Payment	Capital Payment	Total Payment
1	2,391	2,391	120		120
2	4,694	7,085	354	•	354
3	7,937	15,022	751		751
4	20,594	35,616	1,781		1,781
5	24,103	59,719	2,986		2,986
6	9,501	69,220	3,461		3,461
7		69,220	3,461	3,644	7,105
8		65,576	3,279	3,644	6,923
9		61,932	3,097	3,644	6,741
10		58,288	2,914	3,644	6,558
11		54,644	2,732	3,644	6,376
12	ė.	51,000	2,550	3,644	6,194
13	•	47,356	2,368	3,644	6,012
14		43,712	2,186	3,644	5,830
15		40,068	2,003	3,644	5,647
16		36,424	1,821	3,644	5,465
17		32,780	1,639	3,644	5,283
18		29,136	1,457	3,644	5,101
19		25,492	1,275	3,644	4,919
20		21,848	1,092	3,644	4,736
21		18,204	910	3,644	4,554
22		14,560	728	3,644	4,372
23		10,916	546	3,644	4,190
24		7,272	364	3,644	4,008
25		3,628	181	3,628	3,825
26	<u> </u>	O O	0	0	0

TABLE N.2.8 (1) ANNUAL AMORTIZATION (REPAYMENT) AND SETTLERS'
ALLOTMENT (TENTATIVE)
- ALTERNATIVE A-1 -

YEAR	FOREIGN LOAN (RD\$1000)	AMORTIZATION (RD\$1000)	AMORTIZATION (P.W.V.) (RD\$1000)	ALLOTMENT PER ha (RD\$)	ALLOTMENT PER SETTLER (RD\$)
1	2,391	120	114		
2	4,694	354	321		
3	10,983	904	781		
4	27,842	2,296	1,889		•
5	33,517	3,972	3,112		
6	18,625	4,903	3,659		
7		10,064	7,152	862	2,155
8		9,806	6,637	800	2,000
9		9,548	6,155	742	1,855
10		9,290	5,703	687	1,718
11	•	9,031	5,280	636	1,590
12		8,773	4,885	589	1,473
13		8,515	4,516	544	1,360
14		8,257	4,170	502	1,255
15		7,999	3,848	464	1,160
16		7,741	3,546	427	1,068
17		7,483	3,265	393	983
18		7,225	3,002	362	905
19		6,967	2,757	332	830
20		6,709	2,529	305	763
21	•	6,451	2,316	279	698
22		6,193	2,117	255	638
23		5,935	1,932	233	583
24		5,687	1,763	212	530
25		5,419	1,600	193	483

TABLE N.2.8 (2) ANNUAL AMORTIZATION (REPAYMENT) AND SETTLERS'
ALLOTMENT (TENTATIVE)
- ALTERNATIVE B-1 -

YEAR	FOREIGN LOAN	AMORTIZATION	AMORTIZATION (P.W.V.)	ALLOTMENT PER ha	ALLOTMENT PER SETTLEK
•	(RD\$1000)	(RD\$1000)	(RD\$1000)	(RD\$)	(RD\$)
1	2,391	120	114		
2	4,694	345	313		
3 1	7,937	751	649		
4	20,594	1,781	1,465		
5	24,103	2,986	2,340		
6	9,501	3,461	2,583		
7		7,105	5,049	721	1,803
8		6,923	4,686	669	1,673
9	,	6,741	4,345	621	1,553
10		6,558	4,026	575	1,438
11		6,376	3,728	533	1,333
12		6,194	3,449	493	1,233
- 13		6,012	3,188	455	1,138
14		5,830	2,945	421	1,053
15		5,647	2,716	388	970
16		5,465	2,504	358	895
17		5,283	2,305	329	823
18		5,101	2,120	303	758
19		4,919	1,947	278	695
20		4,736	1,785	255	638
21		4,554	1,635	234	585
22		4,372	1,495	214	535
23	:	4,190	1,364	195	488
24		4,008	1,243	178	445
25	•	3,825	1,130	161	403

