ANNEX I COST ESTIMATE

I COST ESTIMATE

TABLE OF CONTENTS

* 1		Page
11	BASIC ASSUMPTIONS	J 1
	I1.1 Proposed Implementation Method	I 1
	Il.2 Material and Labor Cost	12
	11.3 Construction Equipment Cost	
12	CONSTRUCTION UNIT COST	13
13	CONSTRUCTION COST ESTIMATES	I 3

.

LIST OF TABLES

.

		Page
11	MATERIAL AND LABOR COST	14
12	CONSTRUCTION EQUIPMENT COST	I 6
13	SUMMARY OF COST ESTIMATE	18
I 4	CONSTRUCTION COST ESTIMATE SAN FERNANDO DAM AND POWER STATION	I 9
15	CONSTRUCTION COST ESTIMATE CHOLUTECA PLAIN IRRIGATION SYSTEM	I 11

-

-.I.I._ Instational Ball and Strange 192 STORE ALL TRANSPORTER AND IN BASIC ASSUMPTIONS ્રે સ્ટ્રેટ કે દુધ ન્યવ્યું હેય ત્ -----Il-I-Proposed Implementation Method The project is proposed to be implemented on the several local or international competitive bidding basis as shown below. Type of Contract The maine states and Power Station 1. Access and Preparatory Work Local Main Civilworks International war in the Star Electrical Equipment International Loutran M. 4. Mechanical Equipment International 5. Highway Relocation Local 11. Irrigation Facilities 1. Building and Quarters Loca1 2. Headworks International 3. Irrigation and Drainage International Facilities with Farm Road Network in Division 1. 4. Irrigation and Drainage International Facilities with Farm Road Network in Division 2. 5. Irrigation and Drainange International Facilities with Farm Road Netwerk in Division 3. Local 6. Land Preparation and On-Farm Development

Of the proposed local contracts. the contract 1.5 for highway relocation is considered to be carried out by a local contractor under the guidance of qualified foreign contractor. Maximum use of local contractors. national products and domestic human resources is assumed even in the international contracts.

• . .

Cement is assumed to be supplied locally except for the contract I.2 in which moderate heat portland cement (Type II cement) is assumed to be imported for a construction of concrete gravity dam.

.

II.2 Material and Labor Cost

Basic material and labor costs mainly to be supplied locally are shown in Table-11. These costs are based on the cost survey made by the Water Resource Unity of the Ministry of Natural Resources in 1977.

11.3 Construction-Equipment Cost

Costs of basic construction equipment are shown in Table-12." These costs are based on the quotation of local dealers and of the contractors. Most of the construction equipment is assumed to be imported.

I2. CONSTRUCTION UNIT COST

۰, ^۱

. Then Black the day is a

- .,

. .

. .

- - , ~ .

as shown in the following section I3 mainly based on the standard construction costs used in the Water Resource Unity of the Ministry of Natural Resources. Reference is also made to the construction unit price data of the Rio Lindo Power Station construction and of the San Lorenzo New Port construction. The cost is estimated at 1977 price level.

初一-13-

من العالي المراجع المن المراجع ، ا = المراجع

13. CONSTRUCTION COST ESTIMATES

2.4.2

A summary of the construction cost estimates is shown in Table-13 and the detailed cost estimates for the San Fernando Dam and Power Station and for the Choluteca Plain Irrigation System are shown in Table-14 and Table-15, respectively.

- Table- I 1 MATERIAL AND LABOR COST . . Pr Unit Description ton Cement Ordinary (Imported) Moderate heat (Imported) 80 ton an Lars ME อา (ส่ว (ที่) เห็ม่ปร 60 Ordinary (Domestic) 1.3 م کر په ک S ALL MAY MAY ton Reinforcement Steel - 7 - 3- 1- 3 2 d.s Concrete pipe 0.9 ø_4" 1 1 . Et 1 6 -1,-9 Sec. 1 1101 8 12 8:3 15 9:3 18 24.0 24 $m \in \mathbb{R}^{n}$ 30.0 . . . \$ 2. 30^{° *-} さしたまするい ા પ્રેન્ટ જ જેન 36.0 36° ······ . E. S. S. 5 a. a . Aggregates & Others 1.5 River stone 3.0 Crushed fine stone 2.5 Washed river sand 2:0 Gravel Concrete blocks 20x20x40 25 100 pieces Timber (Pine tree) 110 Seasoned timber 85_ Dressed timber 70 °. Rough timber Fuel 0.258 Gasoline 0.138 Diesel to be continued -

Description	Unit	Unit Price (US\$)
Lubricant and Grease		
Lubricant oil	55 gallon container	123
Grease	100 "	160
Bituminous material	٨	0.125
Opérator, Truck	man-day	7.0
n	11	
Londer		12.0
Mechanic, Gasoline	11	12.0
Diesel	U .	10.0
Mason	F#	12.0 8.0
· estate · · · ·		0.0
Plasterer.	11	8.0
Carpenter	11	8.0
Blasting worker	11	7.0
Welder	**	14.0
Reinforcement steel worker	n	12.0
Electrician	"	14.0
Driver-	11	5.0
Surveyör	"	31.0
Level man	95	23.0
Tape man	17	8.0
Staff man	**	10.0
	11	10 0
Foreman	"	18.0
Assistant worker	11	4.0
Common labor	**	2.0

- I 5 -

Table- I 2 CONST	RUCTION FOUL PMENT CO	sr
		1
1tem	Capacity	Unit Pi
Earth work equipment		
Bulldozer	13 6	72,000
- do -	22 1	ें म _{ें न} ा 104 .000
- do -	····· · 33 · t ·····	151,000
$-dv - \cdots$	45 t	212.000
Tractor shovel	0.6 m ³	21.000
- do -	1.0 m ³	
- do -	1.2 m ³	43,000
Dragline	0.8 m ³	84,000
Back hoe	.0.8 m ³	49.000
- do -	1.2 m ³	80.000
Motor grader	9 t	47.000
Motor scraper	16 m ³	240.000
Transportation equipment		
Dump truck	4. t	
- do - '	8 t	21,000
- do -	12 t	35,000
- do -	18 t	75:000
- do	32 t	121,500
Truck	4 t	17,000
- do -	_8 t	21,000
Trailor *	25 t	* 59.000
		۲۰۰۳ ۲۰۰۳ ۲۰۰۳ ۲۰۰۳ ۲۰۰۳ ۲۰۰۳ ۲۰۰۳ ۲۰۰۳
Concrete equipment		· · · · · · · · · · · · · · · · · · ·
Concrete plant	3.0 m ⁻	571.000
Portable concrete mixer	0.6 m	14,000, 14,000
Crushing plant	70 t	ំ 1 75.000 ស្រុះ ខ្មែរ ស្រុះ
Cable crane	4.5.t.	322.000
Truck mixer	3.0 m	28,000

しょえ ちちょう ダブディア・ション 見たい たたい しょうしょう		
(a) The second s second second secon second second sec		
La fer an		
A CALL AND A		
La grand and the second s	Capacity	Unit Price
	- •	(US\$)
		(033)
Öther equipment.		
Road roller	8 t	33.000
	10 t	22,000
	IUL	24,000
<u>.</u>		
Submergible pump	ø80 mm	520
Submergible pump		
	ø80 mm	520 52.000 151,000

۶ کې پېړې د ۲۰ م پې	
Table-I3 SUMM	ARY OF COST ESTIMATE
Description	Local currency Foreign currency Total Component (US\$) (US\$)
L. SAN FERNANDO DAM AND POW	ER STATION
1.1 Access road & preparator	y works 1,640,000
.2 Diversion during constru	ction 150,000 493,000 643,000
1.3 Dam and spillway	
.4 Intake, penstock and out	let 569,000 569,000 629,000
.5 Powerhouse and tailrace	721,000 984,000 1,705,000
.6 Generating equipment	
.7 Transmission line & subs	tation 210,000 1,023.000 1,233.000
1.8 Highwan relocation	1.056.000 264,000 1,320.000
.9 Land compensation	610.000 - 610.000
Sub-total (1)	10,982.000 22,805,000 33,787.000
. CHOLUTECA PLAIN IRRIGATIO	ON SYSTEM
2.1 Communication system & qu	uarters 482.000 396,000 878,000
2.2 El Papalon intake weir	
	3,001,000 2,984,000 5,985,000
1.3 Main canal system	
2.3 Main canal system 2.4 Branch canal system	761,000 1,974,000 2.735,000
	761,000 1,974,000 2.735,000
2.4 Branch canal system	761,000 1,974,000 2.735,000 416,000 1,144,000 1.560,000
2.4 Branch canal system 2.5 Secondary canal system	761,000 1,974,000 2.735,000 416,000 1.144,000 1.560,000 738,000 1,507,000 2.245,000
2.4 Branch canal system 2.5 Secondary canal system 2.6 Drainage canal system	
2.4 Branch canal system 2.5 Secondary canal system 2.6 Drainage canal system 2.7 Farm road system 2.8 On-farm construction	761,000 1,974,000 2.735,000 416,000 1.144,000 1.560,000 738,000 1,507,000 2.245,000 421,000 838,000 1.259,000 2.503,000 - 2.503,000
 2.4 Branch canal system 2.5 Secondary canal system 2.6 Drainage canal system 2.7 Farm road system 2.8 On-farm construction 2.9 Clearing and reclamation 	761,000 1,974,000 2.735,000 416,000 1.144,000 1.560,000 738,000 1,507,000 2.245,000 421,000 838,000 1.259,000 2.503,000 - 2.503,000 2,362,000 - 2,362,000
2.4 Branch canal system 2.5 Secondary canal system 2.6 Drainage canal system 2.7 Farm road system	761,000 1,974,000 2.735,000 416,000 1.144,000 1.560,000 738,000 1,507,000 2.245,000 421,000 838,000 1.259,000 2.503,000 - 2.503,000 2,362,000 - 2,362,000
 2.4 Branch canal system 2.5 Secondary canal system 2.6 Drainage canal system 2.7 Farm road system 2.8 On-farm construction 2.9 Clearing and reclamation 2.10 Land compensation Sub-total (2) 	761,000 1,974,000 2.735,000 416,000 1.144,000 1.560,000 738,000 1,507,000 2:245,000 421,000 838,000 1.259,000 2.503,000 - 2:362,000 2,362,000 - 2:362,000 210,000 - 210,000 11,658.000 11,674,000 23,332,000
 2.4 Branch canal system 2.5 Secondary canal system 2.6 Drainage canal system 2.7 Farm road system 2.8 On-farm construction 2.9 Clearing and reclamation 2.10 Land compensation Sub-total (2) 	761,000 1,974,000 2.735,000 416,000 1.144,000 1.560,000 738,000 1,507,000 2:245,000 421,000 838,000 1.259,000 2.503,000 - 2:362,000 2,362,000 - 2:362,000 210,000 - 210,000 11,658.000 11,674,000 23,332,000
 2.4 Branch canal system 2.5 Secondary canal system 2.6 Drainage canal system 2.7 Farm road system 2.8 On-farm construction 2.9 Clearing and reclamation 2.10 Land compensation Sub-total (2) 	761,000 1,974,000 2,735,000 416,000 1.144,000 1.560,000 738,000 1,507,000 2,245,000 421,000 838,000 1.259,000 2.503,000 - 2,362,000 2,362,000 - 2,362,000 210,000 - 210,000 11,658.000 11,674,000 23,332,000 EXPENSE

- to be continued -

٠

Internation		In the second se		102,400 477,000 177,000 177,000 770,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 1,0000 1,0000 1,0000 1,0000 1,0000 1	86.85 86.85 86.90 10 10 10 10 10 10 10 10 10 10 10 10 10	153,600 318,000 318,000 253,150 253,150 210,000 210,000 210,000 381,5000 381,5000 381,5000 381,5000 381,5000 381,5000 381,5000 381,5000 381,5000000000000000000000000000000000000	1500 1500 1500 1500 1500 1500 1500 1500	256,000 13,5000 290,000 290,000 1,705,000 1,480,000 220,000 220,000 230,000 680,000 680,000
		In the post of the second seco	ر بازیاری در ۲۰۰۰ (۲۰۱۰) ۲۰۰۰ (۲۰۰۰ (۲۰۱۰) ۲۰۰۰ (۲۰۰۰ (۲۰۱۰) ۲۰۰۰ (۲۰۰۰ (۲۰۱۰) ۲۰۰۰ (۲۰۰۰ (۲۰۰۰) ۲۰۰۰ (۲۰۰۰ (۲۰۰۰)	101,400 477,000 477,000 4,500 70,000 70,000 70,000 10,000 10,000 11,056,000 11,056,000 11,056,000 11,056,000 11,050,000 11,050,000 11,050,000		153,600 318,000 2,510,000 2,510,000 2,510,000 2,210,000 2,210,000 3,1100,000 3,81,500 2,264,000 3,81,500 2,264,000 3,81,500 2,264,000 3,81,500 3,91,500	200 200 200 200 200 200 200 200	256,000 13,500 290,000 290,000 290,000 290,000 200,0000 200,0000 200,00000000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Il turn turn und Substation und Substation Liss, Liss,		477,000 477,000 107,000 70,000 70,000 10,000 10,000 10,000 1,0000 1,0000 1,0000 1,00000000		318,000 9,000 2,510,000 2,510,000 983,750 2,910,000 2,910,000 2,910,000 2,910,000 2,910,000 2,910,000 3,1110,000 3,81,500 2,810,000 3,81,500 2,810,000 3,81,500 2,810,000 3,81,500 2,810,000 3,81,500 2,810,000 3,81,500 2,810,000 3,81,500 3,91,500 3,91,		795,000 13,500 290,000 11,705,000 200,000 200,000 200,000 200,000 680,000 680,000
	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	In the line of the		4, 100 17, 150 100, 100 70, 000 70, 000 10, 000 10, 000 10, 000 1, 056, 000		9,000 251,000 <u>2510,000</u> <u>2510,000</u> 983,750 210,000 210,000 210,000 211,000 211,000 254,000 260,000 270,000 260,000 270,000 260,000	200 200 200 200 200 200 200 200 200 200	13, 500 290, 500 290, 500 290, 500 200, 500 200, 500 200, 500 680, 500 700 70, 500 70, 5000 70, 5000 70, 5000 70, 5000 70, 5000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ti ti li S. li S.l		17, 150 100, 000 721, 230 10, 000 10, 000 10, 000 10, 000 11, 056, 000 11, 056		251, 150 251, 150 981, 750 981, 750 290, 000 2290, 000 239, 000 381, 500 381, 500 300 300, 500 300, 500 500, 50	20 20 20 20 20 20 20 20 20 20	290,500 <u>750,000</u> <u>1,705,000</u> <u>1,480,000</u> <u>280,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>552,500</u> <u>680,000</u> <u>552,500</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,000</u> <u>680,0000</u> <u>680,0000</u> <u>680,0000</u> <u>680,0000</u> <u>680,0000</u> <u>680,0000</u> <u>680,0000</u> <u>680,00000 <u>680,00000 <u>680,00000000000000000000000000000000000</u></u></u>
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	It it it it it it it it it it it it it it		1(0) (000 70, 000 70, 000 10, 000 10, 000 10, 000 15, 000 15, 000 11, 056, 000 210, 000 210, 000 1, 056, 000 1		210,000 933,750 210,000 211,000 31,110,000 387,500 635,000 11,022,500 535,000 264,000 264,000		1,705,000 980,000 220,000 220,000 220,000 680,000 680,000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{bmatrix} 171, 250 \\ 1.5, 5.5 \\ 1.5, 5$	and Substation and Substation Intre post Intre post	ر بالمراجع من معالی می المراجع می معالی المراجع می معالی می المراجع می معالی المراجع می معالی المراجع می معالی 1997 - 1997 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 19 1999 - 199 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 199 1999 - 199	721,250 70,000 10,000 10,000 10,000 10,000 1,056,000 1,056,000 1,056,000	م الم الم الم الم الم الم الم الم الم ال	935,750 210,000 210,000 220,000 31,110,000 387,500 387,500 1,022,500 1,022,500 264,000		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	and Substation little post little post little little post little p	ر بالمراجع من معالی معالی المراجع ال 1))) ((((((((((((((((70,000 10,000 10,000 10,000 10,000 10,000 1,056,000 1,056,000 1,056,000		930,000 210,000 210,000 2370,000 331,500 635,000 387,500 1,022,500 1,000 1,022,500 1,0000 1,00000000		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	und Substation Liss, Liss, Lis	280 280 280 280 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20	⁵⁰ ,000 70,000 10,000 10,000 10,000 10,000 1,056,000 1,056,000 1,056,000 1,056,000		930,000 1,410,000 290,000 290,000 3110,000 381,500 381,500 1,022,500 1,022,500 264,000		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	und Substation und Substation Illue yoot Illue yoot Ilu	۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲	70,000 10,000 10,000 10,000 150,000 45,000 1,056,000 1,056,000 1,056,000		1,410,000 210,000 270,000 3,110,000 381,500 381,500 1,022,500 1,022,500	111 112 112 112 112 112 112 112 112 112	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	und Substation Liss: Intre post brence is a second to break the second s	۲۰۰۰ (۲۰۰۵) ۲۰۰۰ (۲۰۰۵)	10,000 10,000 10,000 150,000 455,000 1,056,000 1,056,000 1,056,000 1,000 1,000 1,000		210,000 270,000 270,000 31,110,000 381,500 381,500 381,500 1,022,500 264,000		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	und Substation little post series km brack km km km km km km km km km km km km km k	۲۰۰۰ پیدنی بنده ا ۲۰۰۰ (۲۰۰۵) ۲۰۰۰ (۲۰۰۵) ۲۰۰۰ (۲۰۰۵) ۲۰۰۰ (۲۰۰۵) ۲۰۰۰ (۲۰۰۵) ۲۰۰۰ (۲۰۰۵)	10,000 10,000 150,000 155,000 1,056,000 1,056,000 1,056,000 1,050,000	م الم الم الم الم الم الم الم الم الم ال	210,000 210,000 3,110,000 381,500 533,000 533,000 264,000		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	and Substation filtue post brenct and brenct brenc brenct brenct brenct brenct brenc brenc brenc brenct brenct bre	ر باری بر میں بی میں میں میں میں میں میں میں میں میں می	10, (***) 150, 000 155, 000 2214, 000 2214, 000 1, 035, 000 1, 035, 000	ν, που το	<u>3.71,000</u> 381,500 635,000 1,022,500 264,000		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	atini Substation little nost brace has been been been been been been been bee	280 280 280 280 290 200 200 200 200 200 200 200 200 20	1,056,000 1,056,000 1,056,000 1,056,000	15,500 33,000	387,500 387,500 635,000 1,022,500 264,000	165 000	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	and Substation and Substation and Substation and Substation and Substation and Substation $\frac{153,000}{1000}$ $\frac{153,000}{10000}$ $\frac{153,000}{100000}$ $\frac{153,000}{100000}$ $\frac{153,000}{100000}$ $\frac{153,000}{100000}$ $\frac{153,000}{100000}$ $\frac{153,000}{1000000}$ $\frac{153,000}{10000000}$ $\frac{153,000}{10000000000}$ $\frac{153,000}{1000000000000000000000000000000000$	und Substation Brech and All Km km km km km km km km km km km km km km	6, 60 132,000 280 280 2000 132,000	165,000 45,000 210,000 1,056,000 1,056,000 6,10,400	15,500	387,500 635,000 635,000 1,022,500 1,022,500	231100	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		6,600 132,000 280 280	165,000 45,000 210,000 1,056,000 1,056,000 6,10,400	15,500	387,500 635,000 1,022,500 1,022,500 264,000	23,100 165,000 201	
$\frac{1}{10000}$	$\frac{1}{101000}$ $\frac{1}{101000}$ $\frac{1}{101000}$ $\frac{1}{10000}$ $\frac{1}{100000}$ $\frac{1}{100000}$ $\frac{1}{100000}$ $\frac{1}{1000000}$ $\frac{1}{1000000}$ $\frac{1}{100000000}$ $\frac{1}{10000000000000000000000000000000000$		111.000	45,000 210,000 1,056,000 1,056,000 6,10,400	2. 	6 <u>35,000</u> 1,022,500 264,000	165,000	
$\frac{210,000}{1,05,000} \qquad 13,000 \qquad 13,000 \qquad \frac{266,000}{1,05,000} \qquad 115,000 \qquad \frac{266,000}{1,05,000} \qquad 115,000 \qquad \frac{266,000}{1,0,000} \qquad \frac$	$\frac{210,000}{1,000}$		112,000 280 280	210,000 1,056,000 1,056,000 6,00,400	000	1,022,500 264,000		
In 8.0 <u>110000 110000 110000 110000 110000 11000000</u>			1)1,000 280 280	1,056,000 1,056,000 610,400	33,000	264,000	165 000	
la 8.0 112.000 1.015.000 2241000 2241000 1.005.000 1.005.000 0.0105.0000 0.0105.0000 0.0105.0000000000	la 3.0 11.000 1.015.000 1.005.000 1.005.000 1.000 24.000 1.015.000 1.005.0000 1.005.0000 1.005.0000 1.005.0000 1.005.0000 1.005.0000 1.005.0000 1.005.0000 1.005.0000 1.005.0000 1.005.0000 1.005.0000 1.005.0		112,000	1,056,000 1,056,000 610,400	33,000	264,000	1165,000 2 2 2	7.4
			111,000	1,056,000 1,056,000 610,400	000	264,000	165,000	-1
				1,056,000				1
	1005-000 001/100 000 0		5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	610,400				1.120,000
			280	610,400		· · · · · · · · · · · · · · · · · · ·		
				010 400			, 280 °	610.400
								•
						1		
			· · · · · · · · · · · · · · · · · · ·		· · · · · · · · ·			
							- -	
					۹ زرب د د د			
			2					and the second se
			THE TEP PERTY E AND		うちょう ちょう ちょうちょう ちょうちょう ちょうちょう ちょうちょう ちょうちょう ちょうちょう しょうちょう しょうちょうちょう しょうちょうちょう しょうちょうちょうちょうちょうちょうちょうちょうちょうちょうちょうちょうちょうちょ			and some and some statements
						ひん いちちゃ ちちょくしょ		A sum to a manufact reserver.
					۰			
		,一下,一下,一下,一下,一下,一下,一下,一下,一下,一下,一下,一下,一下,						
			- -		۔ بر		· · ·	
			-	•				

Mathematical Currency (1) Luck (1) Luck (1) Luck (1) Foreign (1)			v.		•	n I n F		- الالالى	· · · · · · · · · · · · · · · · · · ·
Unit Control Manual Init Cont Jacuar Init Cont Jacuar Init Cont Jacuar Init Cont Jacuar	مرکب میلاد المروحات ا			local Currency	د درمه از مرافز مراد .	Foreign (Currency 🐈 پَرَدُرُ		
1 1		Ualt -		. Unit Cost			Amount '	Unit Cost	Junour''',
	t, stippestation of the second sec			· · · · · · · · · · · · · · · · · · ·	، ڈ ٹ ر • 86.000		196-000		,
$ \begin{bmatrix} 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$	and Quaters by a first of the second s	, ,, ,, ,,							
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Vain office.		. 250	, 200	20,000		1.1	250 10 10 10	50,000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	-	E	200	130	75,000	·	3	500-25°	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Cuarters and the second se		, DOLA	, 81 .					200,000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Vice Vorkshop Vice Vice Vorkshop Vice Vorkshop Vice Vice Vice Vice Vice Vice Vice Vice	- -	9	60	21,000				21,000
1 1	shade and a start of the start	Ча ,	· 2,500	2	50,000		,	2 500	· · · 50.000
1 1	Sub-total *			* *	482,000	57 % F	396,000	· · · · ·	878,000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	filead Vork (El Papalon Intake Veir)	• 1			* * - •	٣.	* # * # * *		
	Earth Work					ʻ.			1 ³¹
$ \begin{array}{ccccc} . \ \ \ \ \ \ \ \ \ \ \ \ \$. Excuvation river bed	о г	29, 500	0.4	11,800	1.1	32,450	1.5	44,250
Was concrete (Γ_{ype-1}) 10,200 7 11,000 70 71,1,000 70 <th< td=""><td>', Backfill '. Concels York</td><td>6</td><td>6,600</td><td>0.5</td><td>3,300</td><td>2.0</td><td>13,200</td><td>5.5</td><td>16,500 -</td></th<>	', Backfill '. Concels York	6	6,600	0.5	3,300	2.0	13,200	5.5	16,500 -
Structure (Types,) m_1^2 $2,700$ 52 $13,200$ 50 $13,200$ 700 $10,200$	Mass concrete (Type-B)	<u> </u>	10.200	ŝ	000, 12	- 02	714,000	15	765.000
Production (TyperD) Tell (TyperD) <thtell (typerd)<="" th=""> <thtell (typerd)<="" th=""> Tel</thtell></thtell>	Structural (Type-A)	Ē	2,400	52	124,800	28	67,200	80.	1-192,000
$ \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c}$	Poundation (Type-D)	e.	2,700	7	145,800	16	43,200	8	189,000
Notice for the form $n_{11}^{(1)}$ $1,000$ $1,1,000$ $1,1,000$ $1,000$ <th< td=""><td>5</td><td><u></u>.</td><td>042 17 100</td><td>11</td><td>101 800</td><td></td><td>149,500</td><td>00<u>1</u></td><td>165,000</td></th<>	5	<u></u> .	042 17 100	11	101 800		149,500	00 <u>1</u>	165,000
Vertical concrete block m' 1,100 11,000 110 121,000 120 270 121,000 120 270 121,000 120 270 121,000 120 270 121,000 120 270 121,000 120 270 121,000 120 120 121,000 120 120 121,000 120 121,000 120 121,000 120 121,000 120 121,000 120 121,000 120 121,000 120 121,000 120 121,000 120 121,000 120 121,000 120 121,000 120 120 121,000 120 120 121,000 120 120 121,000 120 120 121,000 120 120 121,000 120 120 120 121,000 120 120 121,000 120 120 121,000 120 120 121,000 120 120 121,000 120 120 121,000 120 120 120 121,0		î	200	5 S S S S S S S S S S S S S S S S S S S	1,350	5.5	1,650	10	000 1
n deck: m 10 30 2,700 2,700 300 2,700 300 10 10 10 10 100 100 2,700 300 2,700 300 100		Ĵŧ	1,100	01	11,000	011	121,000	120	132,000
With the set piles Math the	Operation deck? Sitter sets	E -	2 2	0 <u>1</u>	007	270	2,700	200	1,0000
wit place tip 300 10 100	Truch ruck	ton	\ -	200	8,200	2002	110.700	2,900	118.900
Stop log Stop log $32,400$ 2.400 2.0 $688,000$ 2.5 80 Tompurary Work Tompurary Work n $9,700$ 0.5 $172,000$ 2.0 $688,000$ 2.5 80 Tompurary Work n $9,700$ 0.5 $1,2000$ 790 $100,200$ 80 2.5 80 Tompurary Work n $1,000$ 1.0 1.000 1.0 $1.00,200$ 80 2.5 80 Access road n $1,000$ 1.0 1.000 1.0 2.0 $1.00,200$ 80 2.5 80 Main Canal n $1,000$ 1.0 1.000 1.0 2.000 80 2.0 80 2.0 80 2.0 80 2.0 80 2.0 80 2.0 80 2.0 80 2.0 80 2.0 2.0 80 2.0 2.0 2.0 2.0 2.0	Steel, Sheet piles	tạn	000	10	000 6	066	297,000	1,000	000,000
Dike enhankent m^{-}_{1} $344,000$ 0.5 $172,000$ 2.0 $683,000$ 2.5 8 Tomorary Vork m^{-}_{1} $9,700$ 0.5 4.850 2.0 $19,400$ 2.5 8 Sheet pile 1.0 1.00 1.0 1.00 4.000 2.0 $190,400$ 2.5 3.0 Sheet pile 1.0 1.000 1.0 1.000 4.000 5.0 3.00 3.0 Sheet pile 1.000 1.0 1.000 1.0 1.000 3.0 3.000 3.0 3.000 3.000 3.000 3.000 3.000 3.0 3.000 <	Stop log) E	00	80	2,400	1	•	80	2,400
Confirer dame m ³ 9,700 0.5 4,850 2.0 19,400 2.5 Sheet pile ton 1,800 790 300,200 800 3.5 Sheet pile n 1,000 1.0 1,800 790 300,200 800 Sheet pile n 1,000 1.0 1,800 790 300,200 800 Sheet pile n 1,000 1.0 1,800 790 300,200 800 Access road n 1,000 1.0 764,000 4,00 800 3.5 Main Canal cataal n 110,000 0.4 44,000 1.1 121,000 3.5 Stripping stripping 0.1 15,800 0.1 15,800 0.2 3.5 Stripping n 115,800 0.1 15,400 0.1 19,600 0.5 Stripping n 15,400 0.1 19,600 0.1 1.5 1.5 Stripping n 216,000 0.1 216,000 0.1 1.5 1.5 Stripping n 15,400 0.1 19,600 0.1 1.5 1.5 Stripping n 21,600	Dike embaiktert Fomurun yurt	Ē	344,000	0.5	172,000	5.0	688,000	25	860,000
Sheet pile it 1,000 2,1831,000 3,50 5,50 5,50 5,50 5,50 5,50 5,50 </td <td>Coffer dam</td> <td>~e</td> <td>9.700</td> <td>0.5</td> <td>4.850</td> <td>2.0</td> <td>19.400</td> <td>2.5</td> <td>24.250</td>	Coffer dam	~ e	9.700	0.5	4.850	2.0	19.400	2.5	24.250
Access roud m 1,000 1.0 $\frac{1,000}{764,000}$ $\frac{4,000}{2,831,000}$ 5.0 $\frac{3}{3}$ Bub-total Bub-total $\frac{1,000}{2100}$ $\frac{1,000}{2,831,000}$ $\frac{4,000}{2,181,000}$ $\frac{3,000}{2,181,000}$ 5.0 $\frac{3}{3}$ Main Canal Earth Vorks $\frac{110,000}{2100}$ 0.4 $\frac{44,000}{21,800}$ 1.5 $\frac{5,000}{21,900}$ 5.0 $\frac{5}{3}$ Varia Earth Vorks $\frac{100,000}{21,300}$ 0.4 $44,000$ 1.5 $\frac{5,000}{21,300}$ $\frac{5,0}{20,000}$ $\frac{1}{25,500}$ $\frac{1}{$	Sheet pile	ton	380	10	1,800	262	300,200	800	304,000
Vain Canal Vain Canal Catal Extra nation Catal Extra nation Extribution m Extribution 0.1 Extribution 0.1 Extribution 0.1 Sulf Extructures 0.1 Extruto 0.1 E	Access roud Sub-total	Ē	1,000	1.0	1,000	1.0	2,831,000	5.0	229,500 3,595,000
Tain Land Tain Land Tain Land 110,000 0.4 44,000 1.1 121,000 1.5 Extantion m 110,000 0.1 15,800 2.2 849,200 2.5 Externation m 51,000 0.1 15,100 0.1 2.5 Externation m 51,000 0.1 15,100 0.5 0.5 Subashment m 51,000 0.1 19,600 0.5 0.5 Sul factor m 27,600 0.1 19,600 0.0 1,130,600 0.0 Related Structures m 27,600 90 2,184,000 50 1,130,600 0.0 Related Structures m 27,600 90 2,184,000 50 1,000 10							•		
Vorka Vorka 110,000 0.4 44,000 1.1 121,000 1.5 avation m 386,000 0.1 115,800 2.2 849,200 2.5 ipping m 51,000 0.1 115,800 2.2 849,200 2.5 ipping m 51,000 0.1 19,600 0.1 19,600 0.5 ipping m 27,600 0.1 19,600 0.1 19,600 00.2 ed Structures m 27,600 90 2,181,000 50 1,380,000 140 3									
$\begin{bmatrix} m \\ m $	Earth Vorka	ŗ							
$\begin{bmatrix} m_{1} & 184,000 & 0.1 & 115,800 & 2.2 & 849,200 & 2.5 \\ m_{2} & 51,000 & 0.1 & 5,100 & 0.4 & 20,400 & 0.5 \\ m_{1} & 196,000 & 0.1 & 19,600 & 00.2 \\ m_{1} & 27,600 & 0.1 & 19,600 & 00.2 \\ m_{2} & u & 500 & 0.6 & 5 & 1,130,000 & 140 & 3 \end{bmatrix}$	Excevation	Ē	110,000	0.4	44,000	1.1	121,000	1.5	165,000
1 1 <th1< th=""> 1 <th1< th=""> <th1< th=""> 1 1 1</th1<></th1<></th1<>		ຄີເ	340,000		115,800		849,200	5.0	965,000
1 27,600 90 2,184,000 50 1,130,000 140 3 1 8,700 0.0 60 2,184,000 50 1,130,000 140 3	Soul factor	() - 5 - E	000.001		19.600		19-600		100,122
	Concrete Lining	î.	27,600	06	2, 184,000	20	1, 380,000	140	3,864,000
	Related Structurve South Verte								

ete Worke ete Worke uctural (Type-A) uctural (Type-A) ucturel form log log log ust.Concrete htpu triptabung									
					Amount	Unit Cost	Amount	Unit Cost	Arount
untion (15 per la	Concret+ Vorks	-				7	107 03	6	
	Structural (Type-D)	้ะ	1,800	10 M	11 600	ç 2	001-100 9	02	28,000
	Foundation (Type-A)	e	004		10.000	623	81.000	700	000,16
Terrer Lerrer 1,000	lethforement bur .				18,200	J	ļ	6.0	58.200
Operation Description Description <thdescription< th=""> <thdescription< th=""> <</thdescription<></thdescription<>	CONCIPTO LOFE	1		180	1.600	ı	•	80	1.600
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		E		8	4 000		500	I	7.400
TFU: TFU: <th< td=""><td>Precast Concrete pipe</td><td>Ē</td><td>3(A</td><td></td><td></td><td></td><td></td><td></td><td>AUK AND</td></th<>	Precast Concrete pipe	Ē	3(A						AUK AND
	lates', ', ',	1,1S	\$		070'60			91	
unital Structure unital Structure stration	łock rinran		₽	n.4	160		777	27	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	lifurention Structure								
Restruction No Do DO <thdo< th=""> DO DO</thdo<>	Earth Yorks	r		•		•	- 6	0 r	ý vun
Attach (1) Attach	Excavation	E	3,000		1,800	4.1	4,400	2 W	r , 180
adalterent and frameric and fra	Stripping .	E	150	0.1	D4	+ · · ·			
Contraction Contraction <thcontraction< th=""> <thcontraction< th=""></thcontraction<></thcontraction<>	Embankment 👋	ŧ	1,700	0.3	019	1	- 140 -		
Cruch (Type-1) m T/3 T/3 <tht 3<="" th=""> <th< td=""><td>Backfill .</td><td>É</td><td>760</td><td>0.7</td><td>8<u>,</u></td><td>2.5</td><td>- nc/ • 1 * ·</td><td>,</td><td></td></th<></tht>	Backfill .	É	760	0.7	8 <u>,</u>	2.5	- nc/ • 1 * ·	,	
Instruction (17)***) Instruction (17)***) Instruction (17)*** Instruction (17)*** Instruction (17)************************************	Concrete Vorks	¢	-,			-			
unument (Type+1) at 100 11 100 11 100 11 100 11 100 11 100 11 100 11 100 11 100 11 100 11 100 11 100 11 100 11 100 11 100 11 100	_	`e	720	52	37,440	22		2	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	_			54	. 8,100	16	2,400	- 02.	· · 10.500 ·
$ \begin{array}{cccccc} 11, 00, & 11, 00, & 11, 00, & 21, 20, & 2, 90, 00, \\ 3, 00, & 10, 00, & 10, 00, & 11, 00, & 21, 20, 00, 00, 0, 00, 0, 0, 0, 0, 0, 0, 0, 0$	- 6	ton		11	4,620	623	. 37,380	2001	42,000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		1	2,900	9	17,400	i		6.0	17,400
Norm Norm <th< td=""><td></td><td></td><td></td><td></td><td>3.400</td><td></td><td>21,230</td><td>2,900</td><td>24,630</td></th<>					3.400		21,230	2,900	24,630
Non-tool Tool tool Tool tool <thtool th="" tool<=""> Tool tool <thtool th="" tool<=""> <thtool th="" tool<=""> <thtoo< td=""><td></td><td></td><td></td><td>, ŘO</td><td>160</td><td>• 1</td><td></td><td>, 80 80</td><td>· · · ; · · 190 ·</td></thtoo<></thtool></thtool></thtool>				, ŘO	160	• 1		, 80 80	· · · ; · · 190 ·
Sub-Control	Stop Last		, J		000 100 1		2.984.000		5.985.000
Cault N. M.		ž	•			1.2	4		2
Canal, (b)	والارادين أرزق فوقا يدوالالالا الم			-			,		
m 11, 100 10, 100 10, 100 10, 100 10, 100 21, 400 <	_		•	*					
11, 100 11, 100 11, 100 11, 100 11, 100 20 11, 100 20 11, 100 20 11, 100 20	Janal 1996 (S. S. S		· · · · ·			•			
15,100 10,1 15,100 10,6 17,5 14,5,000 2,0 11,15,100 11,1 11,15,000 0.1 11,15,000 0.2 17 11,15,100 0.1 11,15,000 0.1 11,15,000 0.2 17 11,15,100 0.1 11,15,000 0.1 11,15,000 0.2 11,15,000 11,15,100 0.1 11,15,000 0.1 11,15,000 0.2 11,15,000 0.2 11,15,100 0.1 1,15,000 0.1 1,15,000 0.1 0.2 11,15,000 0.2 11,15,000 0.2 11,15,000 11	Earth Vork 💱 🛛 🕴 🖉								
1 192,000 0.1 192,000 0.1 192,000 0.1 192,000 0.1 192,000 0.1 192,000 0.1 192,000 0.1 192,000 0.1 192,000 0.1 192,000 0.1 192,000 0.1 192,000 0.1 192,000 0.1 192,000 0.1 192,000 0.1 192,000 0.1 192,000 0.1 192,000 0.1 192,000 0.1 102,00 102,00 101,00 114 7,000 2.0 100 125 114 7,000 12,00 122,00 122,00 122,00 122,00 122,00 122,00 122,00 122,00 123,00 124,00 125,00 123,00 124,00 124,00 125,00 123,00 124,00 </td <td>Excavation</td> <td>é</td> <td>15,300</td> <td>0.6</td> <td>6 500</td> <td></td> <td>21,400</td> <td></td> <td></td>	Excavation	é	15,300	0.6	6 500		21,400		
188,000 0.1 188,000 0.1 188,000 0.1 188,000 0.1 188,000 0.1 188,000 0.1 188,000 0.1 188,000 0.1 188,000 0.1 188,000 0.1 188,000 0.1 188,000 0.1 188,000 0.1 188,000 0.1 188,000 0.1 118,000 0.1 118,000 0.1 118,000 0.1 10 <td< td=""><td>Enbankment</td><td>ē</td><td>1492,000</td><td>. 1.0</td><td>192,000</td><td>3.0</td><td>1,476,000</td><td>01</td><td>1,968,000</td></td<>	Enbankment	ē	1492,000	. 1.0	192,000	3.0	1,476,000	01	1,968,000
Illes.000 0.1 18.600 0.1 18.600 0.2 3.0 Illes. 0.0 1.4 7.000 0.6 3.0 9 Illes. 0.6 1.00 1.4 7.000 3.0 9 Illes. 0.6 1.4 7.000 2.1 9 9 9 9 Illes. 0.1 1.900 1.7 2.000 2.1 9	. Strindae		58,000		5,800	· 0 · 4	23,200	· · · · · · · · · · · · · · · · · · ·	29,000
Itra 1,000 1,4 7,000 2,0 Itra 2,000 0.6 3.0 8 Itra 2,000 0.6 3.0 8 Itra 2,000 2.1 0.6 3.0 Itra 2,000 2.1 0.6 2.0 Itra 2,000 2.1 0.6 2.1 Itra 1,000 1.1 2.0 2.1 6,400 Itra 1,000 1.1 2.0 2.1 0.0 Itra 1,000 1.1 2.0 2.1 2.0 2.2 Itra 1,000 1.1 2.0 2.2 2.2 2.2 Itra 1.3 0.000 1.1 2.1 2.2 <td>Sad Carton A Provide A</td> <td></td> <td>188,000</td> <td>0.1</td> <td>118,800</td> <td></td> <td>18,800 5 5</td> <td></td> <td>009,10</td>	Sad Carton A Provide A		188,000	0.1	118,800		18,800 5 5		009,10
1 1,000 1.4 7,000 2.0 1.4 1 1,000 0.6 1.400 2.1 0.0 1.20 1 1 1,000 1.4 7,000 2.0 1.2 1 1 1,000 0.6 2.1 0.0 1.20 1 1 2,000 0.6 2.1 0.0 1.20 1 1 2,000 0.6 2.1 0.0 1.20 1 1 2,000 0.6 2.1 0.0 1.20 1 1 1 1 1.000 1.20 1.20 1.20 1 1 1 1 1.1 1.1 1.20 1.20 1.20 1 1 1 1.1 1.1 1.1 1.20 1.20 1.20 1 1 1 1.1 1.20 1.21 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 <td< td=""><td></td><td></td><td></td><td>•••</td><td></td><td></td><td>· · · · · · · · · · · · · · · · · · ·</td><td></td><td>· · · · · · · · · · · · · · · · · · ·</td></td<>				•••			· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
m 1,000 2,000 2,000 2,000 2,000 2,000 2,000 2,000 120 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>14 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4</td>									14 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
(17) 2,000 2.1 0,400 10 (17) 1,500 1 1,500 10 (17) 1,500 1 1,500 10 (17) 1,500 1 1,500 10 (17) 1,500 1 1,500 10 (17) 1,100 1,500 10 10 (19) 1,100 1,100 10 100 10 (10) 1,100 10 100 100 100 100 (10) 1,100 10 100 100 100 100 100 (10) 10 10 10 100 100 100 100 100 (10) 10 10 100 100 100 100 100 100 (10) 1,50 2,50 1,100 2,50 2,100 100 2,100 100 2,100 2,100 2,100 2,100 2,100 2,100 2,100 2,100 2,100 2,100 2,100 2,100 2,100 2,100 2				0.6	000.0		- 2.000 -	2.0	10,000
I. [17] 1,500 52 21,600 16 20 80 77 70 58 59 51 56 50 58 58 58 58 51 50 51 50 53 51 50 53 53 51 50 53 <td></td> <td>- - -</td> <td></td> <td> D - 7</td> <td>2.000</td> <td></td> <td>6.400</td> <td>0.0</td> <td>. 8,400</td>		- - -		D - 7	2.000		6.400	0.0	. 8,400
(17) (1,50)	Concertant (Strength of Strength of Streng	 						ل (يوه اي	
I (17) 0 <td></td> <td>- - -</td> <td></td> <td></td> <td>78 000</td> <td></td> <td>42,000</td> <td>· · 80 · ·</td> <td>120,000</td>		- - -			78 000		42,000	· · 80 · ·	120,000
11 6,200 623 49,800 700 56 10 13,000 6 33,000 6 33,000 23 11.5 1.5 10 900 900 10 1000 23 10 90 800 10 90 900 10 1000 23 10 90 800 800 5.5 216,730 5.0 200 24 10 90 800 5.5 216,730 5.5 216,730 24 00 10 5.5 216,730 5.5 216,730 24 00 1.5 2.5 1.100 5.5 216,730 24 00 1.1 1.1 1.1 1.1 1.1 1.1 1.1 00 1.1 <td></td> <td>ຄ</td> <td>OUP.</td> <td></td> <td>21 600</td> <td>· · · · · · · · · · · · · · · · · · ·</td> <td>6,400</td> <td></td> <td>28,000</td>		ຄ	OUP.		21 600	· · · · · · · · · · · · · · · · · · ·	6,400		28,000
001 10 50 51,450 100 25 10 10 90 90 10 20 10 90 80 80 10 100 10 10 90 80 25 100 10 10 10 90 80 50 10 10 10 10 90 10 20 20 20 10 10 90 10 10 20 20 10 10 5 216.730 216.730 20 20 11.4 4.600 1.4 4.600 1.4 2.600 20 20 11.80 2.1 1.800 2.1 1.800 2.1 2.1 2.1 11.80 0.7 1.180 2.2 2.2 2.1 2.0 6.000 1.4 2.0 5.5 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2					6.200	623	49.800	700 5	56,000
LLS. L.S. 1950 10 10 25 21,450 10 10 10 100 11 100 100 11 100 100 11 100 100 11 100 100 11 100 100 11 100 100 11 100 100 110 100 100 100 110 100 1			90	- •	000.00	`.		-9-0-	000 11
block m ³ 10 4.5 25,070 10 5.5 216,730 0 4.5 180 5.5 216,730 0 4.5 180 5.5 216,730 1.1 4 4,600 5.1 1.00 1.1 1800 0.7 1.1 1800 0.7 1.1 4 4,600 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1		; ; ;		· · · · · · · · · · · · · · · · · · ·	21.450		1.950		25,400
10 80 80 5.5 216,730 10 4.5 25,070 5.5 216,730 11.5 10 5.5 216,730 216,730 11.5 11.6 2.5,070 216,730 216,730 11.5 11.800 11.4 4,600 11.4 11.1 11.800 0.7 2.3 11.4 11.800 0.7 1.1800 2.3 1.14 11.800 0.7 2.3 1.1800 2.3 11.800 0.7 2.3 3.3 5.000 2.3 11.800 0.7 2.3 3.3 3.3 3.3 11.800 0.7 2.3 3.3 3.3 3.3 11.800 0.7 2.3 3.3 3.3 3.3 3.3 11.800 0.7 2.3 3.3 </td <td></td> <td></td> <td>10</td> <td>.06</td> <td>, <u>906</u></td> <td>, 10 , 10</td> <td>100</td> <td>100</td> <td>000</td>			10	.06	, <u>906</u>	, 10 , 10	100	100	000
0.1 10 5.5 216.730 220 0.1 1.5 25.070 25.070 216.730 0.1 1.5 210.06 211.00 211.00 0.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 <t< td=""><td>Concrete Distory</td><td>ີ . </td><td></td><td></td><td></td><td></td><td></td><td>، SO ، ،</td><td>800</td></t<>	Concrete Distory	ີ . 						، SO ، ،	800
Derivative 25,070 216,730 216,730 Non-state 2100 2100 2100 Non-state 21,000 21,000 21,000 Non-state 21,000 21,000 20,000 Non-state 21,000 21,000 20,000		î	i i i i	· · · · · · · · · · · · · · · · · · ·	180	5.5		101	400
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1			2 2 1		25.070		216.730		241,800
их станов с с с с с с с с с с с с с с с с с с с	Jate & Latet Vorka (************************************	, , , , , , , , , , , , , , , , , , ,							•
n × · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · ·				در مع الا مع مع داره الله المعالية. در مع الا مع مع دارة عامل به العم العمالية	こころう ほうどう いぼうい	are supported and a support of the s	
11. · · · · · · · · · · · · · · · · · ·			1,100	··· 5.1,-0.6%	2,000	·	4. 600		
ment		<u> </u>			1.800		6.000		· · · · · · 1,800
			700		0555		1,400,1	1. 2.2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	
15.600 128 8.400 24, 24, 25, 28 8.400 124, 24, 24, 24, 24, 24, 24, 24, 24, 24,									٩, ⁻
							,		

	1, n i t	Quantity	Lucal Currency	ency.	Poreign	Poreign Currency	Total	
- 1			Unit Cost .	Arount	Unit Cost	💈 (Amount	- Unit Cost	Amount
Reinforcement bar	ton	30	11. · · · · · · · · · · · · · · · · · ·	2, 300	623	18,700	· · · · · · · · · · · · · · · · · · ·	21,000
Concrete formin'	, , , , , ,	2,100	· · · · · · · · · · · · · · · · · · ·	12,600				, 12,600
Hatal Vorks	L.V.	• • •		1, 1, 150		4,600		- 5,750
Coffering	- : 7 2	1,000	E.0	· · · 1300		2,200	-• -• •	2,500
Street piles	ton	02		100	790	55,300		56,000
· · · · · · · · · · · · · · · · · · ·	0			761.000	.	1.974.000	0.7	2 715 000
			•		~		, , , , , , , , , , , , , , , , , , ,	Г
Canal of the second		-		14 17 1 1 1				
Canalus 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			•		, , , , , , , , , , , , , , , , , , ,	- r <u>c</u> c -	· · · ·	
references to the second se		8.500	0.8	6.800	1.7	14.450	2.5	21,250
· Fabanksent	î	275,900	0.5	117,950	5.0	551,800	215	689.750
erister Stripping at a	ĥ	14,000	0.1	4,400	t-0	17,600	0.5	22,000
Sod facing	, E	226,000	0.1	22,600	0.1	22,600	0.2	45,200
Related Structures T				,		· · · · · · · · · · · · · · · · · · ·	ł	
Cafto Morka . Freetation .	۰,	101	9.6	400	1.4	000 01	0-C	
Dackfill .	ſe	4.700	0.7	00011		10.800	0.0	14.100
Concrete Yorks								· · · · ·
Structural (Type-A)	Ē	1,700	2	88.400	۲ ۲	47,600	08	136,000
roundation (lype-u) Deinforrement her	e +	0		7.700	9 (ý	007.11	0'2	70,000
Concrete form		1.000	ۍ. ۲	42,000	1	1	6.0	42,000
P.C. pipe (Total length 1,550 m)	L.S.	r		24,500		2.400		26,900
	Ē	S	06	7,200	01	800		8,000
	- ²	10	80	800	1			8,000
ULLE E MELAI VOIXB Brotter Pumpe & Meter		4		000, 01		204,550		220,400
Sub-total		I		416,000		1.144.000		1.560.000
Drainage Canal								
EATTH VOTKS United at the	~ 1	040 000	2		-	000 631 1	5	000 010 1
Related Structure	Ξ	nonto i c						
Earth Vorka	,							
Excavation	Ê	2,000	4°0	1,200	7 °	2,800	12.0	4,000
Duckfill Concrete Vorke	Ē	1,100		900		000c •	חיר	00r*r
Structural (Type-A)	n é	1, 300	52	67,600	87	36,400	80	104,000
Foundation (Type-D)	Ē	60	54	3,200	16	1,000	6	4,200
Reinforcement bar	ton	56	1	7,300	623	59,200	100	66,500
to the state of the set of the se	, v E -	4, 200	D T			201	Ð	2000
Rock riprap		001-	4.5	1,800	5.5	2, 200	10	4,000
Bridgen								
Farth Vorks Forwation	Υ,	001 1	4	000			•	
								2002

Contretion Total Total <thtotal< th=""> Total Total</thtotal<>	Amount	Unit Cast	Arount
Structure No			
Bill (Foretrent Internation Constraint	16,200	8	46,400
$ \begin{array}{ccccc} Beinforement har being the formula of the formula of$	000	02	78,000
Contractor forma and a standard for		6.0	009.6
Stripting 13, 500 1, 1, 500 1, 4, 900 Dishukarati 1, 1, 500 1, 5, 700 1, 5, 700 Dishukarati 1, 1, 500 1, 5, 700 1, 5, 700 Dishukarati 1, 1, 500 1, 5, 700 1, 5, 700 Dishukarati 1, 1, 500 1, 5, 700 1, 5, 700 Conset 1, 1, 500 0, 1 1, 5, 700 Dishukarati 1, 700 0, 1 1, 5, 700 Dishukarati 1, 700 0, 1 1, 1, 00 Northitisent 1, 700 0, 1 2, 1, 700 Dishukarati 1, 1, 00 0, 1 0, 1 2, 1, 700 Dishukarati 1, 1, 00 0, 1 0, 1 2, 1, 700 Dishukarati 1, 1, 100 0, 1 0, 1 2, 1, 700 Dishukarati 1, 1, 100 0, 1 0, 1 2, 1, 700 Dishukarati 1, 1, 100 0, 1 0, 1 2, 1, 700 Dishukarati 1, 1, 100 0, 1 0, 1 2, 1, 1, 000 Distributi	1,507,000		2,245,000
[100ad] [100ad] <t< td=""><td></td><td></td><td></td></t<>			
Str Tryling 14,900 0.1 1,900 Exhankment 51. 15,700 1.0 15,700 Exhankment 5 15,2000 1.0 15,700 Exhankment 5 15,000 1.0 15,700 Exhankment 5 10,000 0.1 15,700 Exhankment 7,000 0.1 23,000 0.1 23,000 Exhankment 7,000 0.1 23,000 0.1 23,000 Exhankment 7,000 0.1 23,000 0.1 23,000 Exhankment 8 1,100 0.1 23,000 0.1 23,000 Exhankment 8 1,100 0.1 23,000 0.1 24,000 Exhankment 8 1,100 0.1 24,000 0.1 24,000 Exhankment 8 1,100 0.5 21,100 23,000 24,000 Exhankment 8 1,100 0.5 1,100 0.5 1,100 Exhankment 8 1,000 0.5 21,100 1,100			2
Stripping Stripping Enhandment Enhandme	10 400	0.5	24,300
Enhanksent Enhanksent Striphit St	180.000	3.5	532.000
Goldary Firm Faulds m 30,000 0.1 21,700 Strippint m 70,000 0.1 21,700 Bhanksent m 70,000 0.1 21,700 Bhanksent m 70,000 0.1 21,700 Bhanksent m 70,000 0.1 21,000 Bhanksent m 7000 0.1 22,000 Bhanksent m 22,000 0.1 22,000 Bhanksent m 22,000 0.1 23,000 Bhanksent m 22,000 0.1 23,000 Bhanksent m 23,000 0.1 23,000 Busktrill m 2500 530 530 Stretureal (Type=A) m 2500 540 21,000 Restrictsensultar Tim 2500 530 25,000 Restrictsensultar Tim 250 530 530 Restrictsensultar Tim 25,000 0.5 21,000 Restription Tim 25,000 0.5 21,000	90,500	6.0	217,200
Contrary form 0.1 0.1 0.1 0.1 Strippint m 7000 0.1 21,700 0.1 Strippint m m 77,000 0.1 21,700 Strippint m m 22,000 0.1 23,700 Strippint m m 22,000 0.1 23,000 Balantent Cause Vy m m 22,000 0.1 23,000 Balantent Cause Vy m 1,100 0.6 700 23,000 Balantent Cause Vy m 1,100 0.7 23,000 0.7 Balantent Cause Vy m 1,100 0.7 23,000 0.7 23,000 Balantent Cause Vy m 1,100 0.7 23,000 0.7 23,000 Balantent Date Marchent Date m 23,000 0.7 23,000 23,000 Balantent Date Marchent Date m 24,000 0.7 25,000 22,000 Concreate Stam Balantent Date m 23,000 0.5 22,000 22,000 <tr< td=""><td>Sec. 1 .</td><td></td><td></td></tr<>	Sec. 1 .		
Binakasut m 7,000 0.1 21,000 Binakasut m 22,000 0.1 21,000 Binakasut m 22,000 0.7 700 Binakasut m 200 0.7 700 Structural fignes 10,000 0.7 700 Falsive fignes 200 200 6.5 9,000 Falsive fignes fignes 11,000 6.5 11,000 Falsive fignes fignes 11,000 0.5 2.5 100,000 Falsive fignes fignes fignes fignes<	12,000	0.5	15,000
Stripping 0.1 700 0.1 700 Stripping 0.1 2.000 0.1 2.000 Barth Vork 0.1 7.000 0.1 2.2,000 Barth Vork 0.1 0.1 2.2,000 0.1 Barth Vork 0.1 0.0 0.6 700 Barth Vork 0.1 0.1 2.2,000 0.7 Barth Vork 0.0 0.6 0.7 900 Barth Vork 0.0 0.7 0.7 900 Barth Interval 0.0 0.7 1.100 0.7 Structural (Type-D) 0.0 7 900 Structure 0.0 0.7 7 9.000 Structure 0.0 0.7 7 1.1,000 Structure 0.0 0.7 7 1.1,000 Structure 0.0 0.7 1.1,000 0.5 1.2,000 Structure 0.0 0.7 0.7 1.1,000 0.5 1.1,000 Structure 0.0 0.7 0.7 0.000	173.800	2 5	197.500
M. Frand 700 0.1 700 Balanknent 1.00 22,000 1.0 22,000 Balanknent 1.100 0.1 22,000 1.0 22,000 Balanknent 1.100 0.1 22,000 0.1 22,000 Excession 0.1 23,000 0.1 23,000 0.1 23,000 Excession 0.1 0.1 0.0 0.1 23,000 0.1 23,000 Excession 0.1 0.1 0.0 0.1 23,000 0.1 23,000 Excession 0.1 0.1 0.0 0.1 0.1 23,000 0.1 24,000 Excession 0.1 0.0 0.5 11,000 0.1 24,000 Excession 0.1 0.0 0.5 11,000 0.5 24,000 Excession 0.1 0.0 0.5 11,000 0.5 24,000 Excession 0.1 0.0 0.5 11,000 0.5 11,000 Excession 0.1 0.000 0.5 260,000		***	
Balanyle Gause Way B. Strippink B. Stripink B. Strippink	2,800	0.5	3.500
EntendencieMain for the wayExtension	55,000		000 11
Palanque Cause Wy Entil Vork Exerti Vork Exervation Exervation Exervation Fundation (Type-A) Beinforcement bar Reinforcement Concrete form Beinforcement Concrete form Beinforcement Extervation Extervat			
Earth Vork Earth Vork Backrill Work Concrete Vork Sururural (Type-A) Beningreement bar Peundation (Type-A) Reinforcement bar Reinforcement bar Reinforcement bar Concrete form Sub-total Concrete form Beningreement Sub-total France of the state and Development Earth Vorks of the state for and Structures Earth Vorks of the state and Structures Earth Vorks of the state Sub-total (Type-A) Beningreement France of the state and Structures Earth Vorks of the state Structures (Type-A) Concrete form Backfill (Type-A)	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
Excevation Backfill Concrete form Foundation (Type-A) Structural (Type-A) Structural (Type-A) Structural (Type-A) Reinforcement bar Reinforcement bar Reinform Reinforcement bar Reinforcement b	, 500	2.0	,
Deckrill (Type-A) m 200 Startetural (Type-A) m 200 Foundation (Type-D) m 200 Concrete form 200 Concrete form m 200 Concrete form m 200 Concrete form m 200 Concrete form m 200 For the form m 200 Concrete form m 200 Excavation (Type-A) m 200 Concrete (Type-A) m 200 Excavation (Type-A) m 200 Excavation (Type-A) m 200 Concrete (Type-A) m 200 Excavation (Type	1.400	0	1 800
Concrete Vork Structural (Type-A) Reinforcement bar Concrete form Concrete form Empowelopment Sub-total Sub-total Sub-total Sub-total Sub-total Ecantion Ecantion Ecantion Exavation Exertiary canal Tertiary canal Tertiary canal Concrete Economic (Type-A) Backfill; Foundation (Type-A) Concrete Economic (Type-A) Concrete Foundation (Type-A) Concrete Foundation (Type-A)			1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
Structural (Type-A) m 200 Foundation (Type-D) m 200 Concrete form br 77 Concrete form br 900 Concrete form 10 10 54 Concrete form 10 10 00 Concrete form 11.5 000 0.5 11.5 Frailed for the 11.5 1000 0.5 2.5 1100 000 Excavation for the 11.5 1000 11.5 2.5 1100 000 Excavation for the 11.5 1000 10.000 2.5 1100 000 Excavation (Type-A) m 110000 10.000 2.5 1100 000 Backfilling for 10000 10.000 10.000 2.5 1100 000 Backfilling for 10000 10.0000 10.000 10.000 10.000 10.000 10.000 10.000 10.0000 10.0000 10.0000 10.0000 10.0000 10.0000 10.0000 10.0000 10.0000 10.0000 10.0000 10.0000 10.0000 10.00000 10.00000 10.00000 10.00000000	18.200	8	52,000
Youndation (Type-D) to Reinforcement bar with 200 b f 7 concrete form n2 boot concrete form 15,000 concrete form n3 boot concrete form (Type-A) 110,000 backfills for the form of the form of the form for the form n3 boot concrete form (Type-A) 110,000 backfills for the form (Type-A) 110,000	3.200	, 02 , 1	14.000
Reinforcement Lar Concrete form Temporary Vorka Coffering Feriary canal Tertiary canal Excavation Excavatio	. 18.700 -	001	21,000
Concrete form Temporary Vorka Sub-total Sub-total Sub-total Sub-total Sub-total Sub-total Sub-total Sub-total Friday Canal Example Exam		6.0	, 0 00 , 0, 000
Confrence on the second structures of the second structures of the second structures ([YPP=A]) and structures ([YPP=A]) a	2,5 1,5		
<pre>contering arm Development arm Development Feritary cann Feritary ca</pre>	, 48 , 000 ⊆ 5	2.5 5	67,000
Teriary tenal arm Development Instanty tenal Excavation	818,000		1,259,000
arm Development umain free start for the second se	a start and a		
arms Perioperation main friend in the second of the secon	r		
рани 11.1 2.5 11.1 2.5 11.1 2.5 11.1 2.5 11.1 2.5 11.1 2.5 11.1 2.5 11.1 2.5 11.1 2.5 11.1 2.5 11.1 2.5 11.3 0 000 000 11.5 1000 1000			
200 1.5,000 1.1,000			
и 130,000		1 1 1	22.500
а 2000 20			
2000 2000 2000 2000 2000 2000 2000 200			
2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0		• • •	,
		, , , , , , , , , , , , , , , , , , ,	550,000
10,000 10,000 11,00000000			
10,000 12.0 12.0 12.0 12.0 12.0 12.0 12.0 1			
11.0 11.0 11.0 11.0 11.0 11.0 11.0 11.0			000°02
11(17b+-b) (17b+-b) (30,000
[[Type=4]] [[.			
	ور ماريخوي ا	80.	120,000
			14,000
			000,01
			13 500
		and the second sec	

.

، معرفة من المراجع الم 	na ana aona ao amin'ny fivon' na faritr'i Anna ao ao amin'ny faritr'i Anna ao ao amin'ny faritr'i Anna ao ao am No ao amin'ny faritr'i Anna ao amin'ny faritr'i Anna ao amin'ny faritr'i Anna ao amin'ny faritr'i Anna ao amin' No ao amin'ny faritr'i Anna ao amin'ny faritr'i Anna ao amin'ny faritr'i Anna ao amin'ny faritr'i Anna ao amin'
1 2 3	- I 15 -
Amount	
L Total	$ \begin{array}{c} & = 1 \\ = $
Amount?	
s Roreign Currency Unit Cost & Am	
orei gr Cost	$ \begin{array}{c} \frac{\partial (x)}{\partial x} = -\frac{1}{2} \left[\frac{1}{2} - \frac{1}{2} \left[\frac{1}{2} - \frac{1}{2} + \frac{1}{2} \right] \right] \\ = \frac{\partial (x)}{\partial x} = -\frac{1}{2} \left[\frac{1}{2} - \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} \right] \\ = \frac{\partial (x)}{\partial x} = -\frac{1}{2} \left[\frac{1}{2} + $
Unit	
Amount	21.10,000 21.10,0000 21.10,0000000000000000000000000000000000
local Currency	
scal C. Sout	
unit (
5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -	
Quantity	
B	
Unit	
۲ – ۲۰۰۰	
	n sen an
4"	
	Claring and Reclamation Forest Creation Sub-total Sub-total Sub-total
5 1 x ⁶ v	na n

ANNEX J ECONOMIC AND FINANCIAL STUDIES

LIST OF TABLES

J1	ECONOMIC PRICE OF SUGARCANE (EXPORT SUBSTITUION)	J1
J2	ECONOMIC PRICE OF COTTON (EXPORT SUBSTITUION)	J2
J3	ECONOMIC PRICE OF MAIZE (IMPORT SUBSTITUTION)	J3
J4	ECONOMIC PRICE OF SORGHUM (IMPORT SUBSTITUTION)	J4
J5	ECONOMIC PRICE OF RICE (IMPORT SUBSTITUTION)	J5
J6	ECONOMIC PRICE OF BEEF (EXPORT SUBSTITUTION)	J6
J7	ECONOMIC PRICE OF UREA (IMPORT SUBSTITUTION)	J7
۶ ۱ ۰	PRICE OF AGRICULTURAL PRODUCT	J8
J9	PRICE OF AGRICULTURAL INPUT	.19
J10	NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITHOUT PROJECT (ECONOMIC PRICE)	J10
J11	NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITH PROJECT (ECONOMIC PRICE)	J23
J12	NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITHOUT PROJECT (FINANCIAL PRICE)	J35
J13	NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITH PROJECT (FINANCIAL PRICE)	J48

•

••.

Page

.

Table J1 ECONOMIC PRICE OF SUGARCANE (EXPORT SUBSTITUTION)	
	<u>\$/ton</u>
International market price $\frac{1}{1}$ of sugar	337
Loading, port and storage charge	15
Transportation cost from Tegucigalpa to Perto Cortes	21
Selling price of Central Sugar Association	301
Handling charge of Central Sugar Association	20
Transportation cost from project area to Tegucigalpa	12
Selling price of sugar factory	269
Processing cost	143
Farmgate price of sugar cane ² (Purchasing price of sugar factory)	12.6

• •

ŷ

/1 [1BRD projected price for 1985 at 1977 constant price.

- <u>/2</u> Rendment: 10%

Table-J2 ECONOMIC PRICE OF COTTON (EXPORT SUBSTITUTION)

International market price 1 Shipping cost include insurance FOB Perto Cortes: 1,380 Loading, port and storage charge Transportation cost from San Lorenzo to Puerto Cortes: 28 Selling price of factory Processing cost Farmgate price of seed cotton

/1 TBRD projected price for 1985 at 1977 constant price.

\$/ton

- J+3≈	
(a) The second s Second second secon second second sec	
and a standard and a An an	
Table-J3 ECONOMIC PRICE OF MAIZE (IMPORT SUBSTITUTION)	
LADIE-JJ ECONUMIC PRICE OF MAIZE	
(IMPORT SUBSTITUTION)	
يى بى ئەركىيە ئەركىيە يەت بىرى ئەركىيە يەت بىرى ئەركىيە ئەركىيە ئەركىيە ئەركىيە ئەتتەركىيە بىرىيە بىرىيە يەت ب سىرىيە ئەركىيە ئەركىيە ئەركىيە ئەركىيە ئەركىيە ئەركىيە ئەركىيە ئەركىيە ئەتتەركىيە ئەتتەركىيە ئەتتەركىيە بىرىيە ي	
11111	×
του με το μάνα με δα απολογία της	\$/ton
International market price/1	
	129
Shipping cost include insurance	5
Shipping cost include insurance	134
Unloading, port and storage charge Transportation cost from Perto Cortes to Project area	15
Transportation and from David Contants In the	
contes to Project area	31
Farmgate price in the project area	180
الله الله الله الله الله الله الله الله	
ب چې د قير چ	

9

/1 IBRD projected price for 1985 at 1977 constant price

Table-J4 ECONOMIC PRICE OF SORGHUM (1MPORT SUBSTITUTION)

International market price/1 Shipping cost include insurance CIF Puerto Cortes Unloading, port and storage charge Transportation cost from Puerto Cortes to project area Farmgate price in project area

1 IBRD projected price for 1985 at 1977 constant price

1 IBED projected price for 1985 at 1977 constant price

Table- J5 ECONOMIC PRICE OF RICE (IMPORT SUBSTITUTION)

International market price 1 <u>\$/ton</u> 390 Shipping cost include insurance 23 CIF San, Lorenzo 413 Unloading, port and storage charge 15 Transportation cost from San Larenzo to Choluteca 4 Selling price of Choluteca 432 Milling cost -91 Price of paddy (Milling rate: 60%) 205 Transportation cost from project area to Choluteca -4 Farmgate price of paddy 201

- - J 5 -

<u>/1</u> IBRD projected price for 1985 at 1977 constant price.

ECONOM1C PRICE OF! (EXPORT SUBSTITUTION) \$/.ton -2,160 International market price/1 2 6 1 1 1 3 1 5 7 1 A Loading, port and storage charge Transportation cost from Choluteca to Puerto Cortes Selling price of slaughter house 1971 to 1985 1985 2,009 Cost of slaughter the state of 231 Farmgate price of cattle (liveweight)/2 massive (1) 613的感觉就是长期 As beter hand the main the way. Yere's a growth start /1 IBRD projected price for 1985 at 1977 constant price. $\frac{2}{2}$ \$2,009 - \$231 = \$1,778

22,009 = 0251 = 01,110
\$1,778 x dressing rate 34,5% ≈ \$613/ton

(1MPORT SUBSTITUTION)	
	Uréa <u>S/ton</u>
International market price /1	190
Shipping cost include insurance	56
CIF Puerto Cortes	246
Unloading, port and storage facilities	15
Transportation cost from Perto Cortes to project area	31
Selling price in project area	292

/1 JBRD projected price for 1985 at 1977 constant price

• • • • -Table-J8 PRICE OF AGRICULTURAL PRODUCT Unit: \$

Description	<u>Unit</u>	Economic	<u>Finan</u>
Sugar cane	ton	12.6	- <u>f</u> 9
Seed cotton	ton	509 - (1999)	·:;562
Naize	ton	180	्र 124
Sorghum	ton .	163	102
Beans (b)	ton	264	~ 264
Sesame	ton	330	330
Rice (Paddy)	ton	.201	187
Melon	ton	- 208	208
Water melon	ton	72	72
Vegetables (tomatos assumed)	ton	107	107
Milk	k k	2 124 - The	124
Cattle (liveweight)	ton	0.61	. 0

n an anna an An Anna an Anna an			
Table-J9 PRICE	OF AGRICUL	TURAL INPUT	
ار در همید از توجه اینید از او تاکید در از میزود از استین کار در از این مرکز میکند از میکند از این میکند از میکند از میکند.	、 a ≚ I		lini+.' ¢
(a) The second second second second sec			Unit: \$
	Unit	Economic	Financial
Seeds/Seedlings			41
Sugar cane	ton	12.60	9.37
Cotton seed	kg	0.29	0.32
Maise	kg	0.64	0.44
Sorghum	kg	1.05	0.66
Beans	kg	0.40	0.40
Sesame	kg	0.33	0.33
Rice	kg	0.42	0.39
Melon	kg	13.95	13.95
Water melon	kg	10.00	10.00
_Vegetable (tomatos assumed)	kg	10.00	10.00
Fertilizers			
12 : 24 : 12	kg	0.32	0.22
13 200 11 12 12 14 10 10 10 10 10 10 10 10 10 10 10 10 10	kg	0.35	0.22
Urea	kg	0.29	0.20
Fungicides	- O		~ · • •
	1.	14.04	0.00
Daconil Andrews	kg	14.36	9.90
	kg	3.83	2.64
, Banlaté (M-45):	kg	33.99	23.44
Insecticides			
Furadan	kg	2.39	1.65
Tomaron	۶.	12.69	8.75
Dipterex	kg	11.60	8.00
Orthene .	kg	20.36	14.04
Lannate	kg	34.92	24.08
Aldrin	kg	0.96	0.66
Malathion	kg	5.08	3.50
Herbicides.			
Gesaprim	kg	4.71	3.25
2 . 4 - D	<u>,</u>	3.06	2.11
DNA 6	X	4.00	2.76
Atrazine	kg	12.33	8.50

-

Tab	le - J 10 ECONOMIC N	ET RETU	RN. PER HECTAR	EFOR	
	AGRICULTUR		CTS - WITHOU	T PROJECT	
	(1) SUGAR	CANE (E	STATE FARM)		
		ہ ملہ آم ہے ہ			
	- · · · · · · · · · · · · · · · · · · ·				، ،،،،،،،،،،،،،،،،،،،،،،،،،،،،،،،،،،،
	۲۰ وی ۲۹۵۵ می ۲۹۵۵ ۲۰ ۲۰ ۲۹۹ میروندی ۲۰ ۲۰ ۲۰ ۲۰ ۲۰			and a second	1. 17 2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
	· · ·	i vy j v	ي دي ويون ٿي	Plantifless	Ratoon
	¥.	a * "	مەلەر بىر قىلىغى ئىش بىلىم ب	- Cane	<u> Cane -</u> -
		~		(\$)	(\$)
• •	Care and the	* .			
1)	Gross return				
	– Plant cane	के जन्म	, î ș ș ș		•• 74 . * * *
	(100 ton/ha x \$12.	.6/ton)	<u>יין אין אין אין אין אין אין אין אין אין </u>	<u>.260</u> <u>1.</u>	<u>134</u>
	ъ.	یرا ب	· · · · ·		
	- Ratoon cane	:': {:+on}	· · · · · · · · · · · · · · · · · · ·	The second	
	(90 ton/ha/x \$12.6	J* 6011)	,		1.1
		2 2			
(11	Production cost	٠.		م من	с. С. И.
	1 - 1 (b.	· L : : _	erv).	్రాలో సినిమం విద్యాణం ముక్టించాడు	
	Land preparation (by "Planting or ratooning		eryp	32.14	12.86
	Application of ferti			20.71	20:71
	Application of agro-		ls	4.29	4.28
	Irrigating	-	s [−] u	96.42	96.42,
	Weeding 175		, · ,	42.86	
	Harvesting Transportation	, '~			128.70 148.50
	Other works (earthin	ng etc.)	ب بر م	50.00	50.00
	Farming materials			نىڭ ئۆلەر ئەرىپى بەر	ٽيون ۽ ٿو ۽ ٿي
	- Seed (6 ton ha)			75.60	33 3
	- Pertilizers	4	و هم او در در می او در می او مورد می مراد می او در	128.70	128.70
	- Agro-chemicals Miscellaneous			35.48 42.50 10 million	35.48 33.43
		2 - 4	· · · · · ·	42.00	
	Total	τ		892.41	<u>701-94</u>
	(Rounded)	-,	، میں جب جب ج ان ج	(892)	(702)
	4 * * * *				ب میں میں میں اور میں اور میں اور میں
TII)	Net return	7 3		368	432
,		* [*] . ****			
	±,° *	·			X S

and the second secon		
Table - J'10 ECONOMIC NET RETURN PER	HECTARE FOR	
AGRICULTURAL PRODUCTS -	TTHOUT PROTEOM	
(2)' SUGAR CANE (OUTGROW	CRS' FARM)	
na day indu day a set water and a set a		······································
·····································	Plant	Ratoon
· the first of the second		Cane
an an ann ann an tha ann an	<u>Cane</u> (\$)	(\$)
	· ·	/
1) Gross return		
- Plant cane		
(90 ton/ha x \$12.6/ha)	1,134	1.008
- Ratoon cane		1.000
- Ratoon cane		
(80° ton/ha x \$12.6/ha)		
States and the		
(I) ' Production' cost		
II) Production cost		
Land preparation by machinery	64.29	_
Planting or ratooning	21.43	- 35.71
Application of fertilizers	20.71	20.71
Application of fertilizers Application of agro-chemicals	3.57	4.29
e Weeding e ,	42.85	28.57
A Harvesting and	128.70	114.40
Transportation	148.50	132.00
, Other works	50.00	67.14
Farming materials		
- Seed (10 ton/ha)	126.00	-
- Fertilizers	115.30	115.30
Agro-chemicals	10.35	10.35
Miscellaneous	36.59	26.42
Total .	768.29	554.89
(Rounded)	(768)	$\frac{(355)}{(555)}$
	(,,	1 2 1
I) Net return	<u>366</u>	<u>453</u>

Tab	AGRICULTURA	- J 12 T. RETURN PER HECTARE FOR L PRODUCTS - WITHOUT PROJECT CANE (EXPANDED OUTGROWERS', FARM)
		ان او میں او میں اور میں در اور اور اور اور اور میں میں بیان ہوئے کہ میں اور اور اور اور اور اور اور اور اور او اور اور میں اور میں
		Plant
	. <u>t</u> . 	$\frac{Cane}{(\mathbf{S})}$
1)	Gross return	
	- Plant cane (80 ton ha x \$12.6	ha) <u>1:008</u> 12 <u>882</u>
11)	- Ratoon cane (70 ton; ha x \$12.6) Production cost	
	Land preparation by a Planting and ratoonin Application of ferti Application of agro- Weeding	ng lizers chemicals 42:85 114:40 114:40
	Transportation Other works	50:00 50:00 67.14 50:00 67.14
	Farming materials - Seed (10 ton ha)	126.00
	- Fertilizers - Agro-chemicals	115.30 115.30 115.30 10.35 10.35
	Miscellaneous	35.05 24.88
	Total (Rounded)	<u>735.95</u> (736)
[11]	Net return 🦿	272

Table - J. 10 ECONOMIC NET, RETURN PER HECTARE AGRICULTURAL PRODUCTS - WITHOUT (4) COTTON	FOR PROJECT
	A
	Amount (\$)
[) Gross return (2 ton/ha x \$509 ton)	1.018.00
11) Production cost	
Land preparation by machinery	39.29
Seeding	7.15
Resowing	5.72
(Dinching)	5.72
Cultivating by machinery	20.00
> 0 whbirderion of fertifizer	10.00
Weeding	40.00
Application of agro-chemicals by air craf	
Harvesting	88.89
0ther works	9.29
Transporation	21.43
& Farming materials	
Trick Seed (25kg/ha)	9.10
- Fertilizers	109.62
🔄 Insecticides	271.55
No - 13 - Sacks, string, etc.	5.71
Miscellaneous	107.24
Total	822.14
(Rounded)	(822)
III) Net return	196

		4: -
	e – J 10 ECONOMIC NET RETURN	na <u>na stati na stati Stati na stati na stat</u>
Table	AGRICULTURAL PRODUC	TS - WITHOUT PROJECT
	(5) MAIZE (SEMI-ME	CHANIZED FAIMING)
		Amount
1)	Gross return (2.0 tons/ha-x \$	180/ton)
•••	-	
	- 3	A CARL AND A SALE AND A
[1]	Dur Justian cost	
T.T.)	Production cost	ا میں میں جو میں
11)	4	rv
11/	Land preparation by machine	
117	4	ication
11)	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery	ication izer 4:29
11)	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery Application of agro-chemica	ication izer 18 19-11-43 18 19-11-43
11)	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery Application of agro-chemica Weeding and other works	ication izer 1s ::::::::::::::::::::::::::::::::::::
11)	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery Application of agro-chemica Weeding and other works Harvesting	ication izer 1s ::::::::::::::::::::::::::::::::::::
,	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery Application of agro-chemica Weeding and other works Harvesting Transportation	ication izer 18 (20) 19.65 19.65
,	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery Application of agro-chemica Weeding and other works Harvesting Transportation Farming materials	ication izer 18 200 2010 2010 2010 2010 2010 2010 201
,	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery Application of agro-chemica Weeding and other works Harvesting Transportation Farming materials	ication izer 11.43 1s 19.65 19.65 10.24
,	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery Application of agro-chemica Weeding and other works Harvesting Transportation Farming materials - Seed - Fertilizers	ication izer 18 11.43 18 19.65 19.65 19.65 19.65 19.65 19.65 19.65
,	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery Application of agro-chemica Weeding and other works Harvesting Transportation Farming materials - Seed - Fertilizers - Agro-chemicals	ication izer 1s 1s 2010-71 izer 11.43 2010-710
,	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery Application of agro-chemica Weeding and other works Harvesting Transportation Farming materials - Seed - Fertilizers	ication izer 1s izer 11.43 is is is is is is is is is is is is is
,	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery Application of agro-chemica Weeding and other works Harvesting Transportation Farming materials - Seed - Fertilizers - Agro-chemicals Miscellaneous	ication izer 1s izer 1s izer 11.43 iziziziziziziziziziziziziziziziziziziz
,	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery Application of agro-chemica Weeding and other works Harvesting Transportation Farming materials - Seed - Fertilizers - Agro-chemicals Miscellaneous	ication izer 1.43 1s 1.43 1s 1.43 19.65 19.65 19.65 10.24 53.85 10.87 10.87
,	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery Application of agro-chemica Weeding and other works Harvesting Transportation Farming materials - Seed - Fertilizers - Agro-chemicals Miscellaneous	ication izer 1s 1s 2010.71 izer 11.43 2011.44 2011.43 2011.44 2011.43 2011.44
,	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery Application of agro-chemica Weeding and other works Harvesting Transportation Farming materials - Seed - Fertilizers - Agro-chemicals Miscellaneous	ication izer 1.43 1s 1.43 1s 1.43 19.65 19.65 19.65 10.24 53.85 10.87 10.87
	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery Application of agro-chemica Weeding and other works Harvesting Transportation Farming materials - Seed - Fertilizers - Agro-chemicals Miscellaneous Total (Rounded)	ication izer 10.71 izer 11.43 is 11.43 is 11.65 is 11.24 is 11.65 is 11.24 is 11.687 is
	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery Application of agro-chemica Weeding and other works Harvesting Transportation Farming materials - Seed - Fertilizers - Agro-chemicals Miscellaneous Total (Rounded)	ication izer 10.71 izer 11.43 is 11.43 is 11.65 is 11.24 is 11.65 is 11.24 is 11.687 is
11)	Land preparation by machine Seeding and fertilizer appl Application of split fertil Cultivating by machinery Application of agro-chemica Weeding and other works Harvesting Transportation Farming materials - Seed - Fertilizers - Agro-chemicals Miscellaneous Total (Rounded)	ication izer 10.71 izer 11.43 is 11.43 is 11.65 is 11.24 is 11.65 is 11.24 is 11.687 is

N,

- J.15 - Table - J 10 ECONOMIC NET RETURN PER HECTARE AGRICULTURAL PRODUCTS - WITHOUT (6). MAIZE (TRADITIONAL FARMING)	For Project
and the first state of a	
	Amount (S)
I) Gröss return (1.6 tons/ha x \$180/ton)	288.00
II) Production cost	
Land preparation	28.57
- The Seeding () which we	10.71
A Application of agro-chemicals	7.14
Weeding and other works	38.95
Harvesting and threshing	15.72
Transportation	5.71
Farming materials	
Agro-chemicals Miscellaneous	10.24
Agro-chemicals	51.78
Miscellaneous	8.44
Total	
	177.26
(Rounded)	(177)
III) Net return	<u>111</u>

- J 16 -ECONOMIC .NET RETURN, PER HECTARE FOR AGRICULTURAL PRODUCTS - WITHOUT, PROJECT (7) SORGHUM (SEMI-MECHANIZED FARMING) Table - J 10

- J 16 -

	· · · · · · · · · · · · · · · · · · ·	
	•	
	······································	<u>Amount</u> (S)
1)	Gross return (2.0 to	ns/ha x:\$163/ton) :: :: :: :: :: 326 in .: ::
11)	Production cost	
	Application of agr Weeding and other	fertilizer application p-chemicals works
	Harvesting and three Transportation	esting with the second s
	Farming materials	· · · · · · · · · · · · · · · · · · ·
	- Seed -	10.50
	- Fertilizers	ر 🖓 🖓 🕹 🖓 🖓 🖓 🖓 🖓 د د د د د د د د د د د د
	- Agro-chemicals	23.30 C
	Miscellaneous	9.25
	Total	<u>194.23</u>
	- 	ىرىنىڭ مەسىرىكى ئۇيۇنىڭ تېرىدۇ. بىرى ئىڭ ئۇيۇنىڭ تېرىدا
III)	Net return	<u>132</u>
	بالمستعلم والمستعلم و	۱۹۹۵ ما ۲۰ بلند که مسته قلبیش۲۰ رود زمونه و کله عن این دهنهه به اکلیستان به مواد از این مانو استان از با این ا ۱۹ از ا

- J. 17 -Table - J 10 ECONOMIC NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITHOUT PROJECT (8) SORGHUM (TRADITIONAL FARMING)

a strate the second	, ,
	Amount
	(\$)
I) Gross return (1.6 tons ha x \$163 ton)	2(0.90
	$\frac{260.80}{(261)}$
	(261)
II) Production cost	
😤 - Land preparation	20 57
Seeding (Seeding	28.57
Application of fertilizer	5.71
Application of agro-chemicals	4.29
Weeding and other works	4.29
Weeding and other works Harvesting and threshing	17.86
Transportation.	17.86
- K-Farming materials	5.71
- Seed	7.35
- Fertilizers	53.85
Agro-chemicals	
Miscellaneous	10.35
	7.79
Total	162 62
 A second sec second second sec	$\frac{163.63}{(164)}$
γανογοδιατίας μαρικατιστικά του πολιτικού του του μαρικού του του μαρικού του του του του του του του του του Το μαρικού πολιστικού του	(104)
8 x y w	
II) Net return	07
	<u>97</u>
, nor tum	

- کې سر چې • • • • • • • • • , , ۲ . *****s ECONOMIC NET RETURN PER HECTARE FOR Table - J 10 AGRICULTURAL PRODUCTS, - WITHOUT PROJECT (9) SESAME (19) n ? x 1000 an ang shi na ang shi Ă<u>mount</u> (\$):5 429.00 nŕ · · · · ,+ i II) Production cost . Land preparation by machinery Seeding and basic fertilizer application Thinning Application of insecticides and the second s Transportation *_ ,' 1.5° ~~ Farming materials - Seed - Fertilizers - Insecticides . 23.21 Miscellaneous و المرتبع الم 255.22 Total (255) ÷, -174 III) Net return حيدي و با سيد و

Table - J 10 ECONOMIC NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITHOUT PROJECT				
			(10) RICE	
			n an ann ann ann an ann an ann an ann an a	
ا بې د د واد واد واد واد واد واد واد واد واد	·····			
	Amount			
	(\$)			
1) Gross return (3-ton/ha x \$201/ton)				
	<u>603</u>			
11): Production cost				
A Land preparation by machinery Seeding by machinery	42.86			
Application of fertilizers	8.57			
Application of herbicides	7.14			
Application of insecticides and fungicides	14.29			
Weeding and other works	11.43 17.86			
Control for birds damage	7.14			
Harvesting	60.32			
Transportation	11.10			
Farming materials	11110			
– Seed	42.00			
Sec-1- Fertilizers	111.85			
Herbicides	73.23			
An insecticides and fungicides	61.42			
Miscellaneous	23.46			
ng v state un te	100 17			
Total A Counded)	$\frac{492.67}{(493)}$			
	(493)			
A Martin and A Martin				
III) Net return	110			
and the second sec				

ۍ کې د مېږ کې چې د مېږ ۱۰ در د کې ي Table - J 10 ECONOMIC NET RETURN PER HECTARE FOR tion with the AGRICULTURAL PRODUCTS - WITHOUT PROJECT ('11) MELON ••• لى ئەرىپىيى ئەرىپىيى Amount - (S) : a. I) Gross return (5.2 ton/ha x \$208) * 1.082 <u>۔</u> رُ 5.2 - 1951 <u>2</u> 2 11) Production cost Land preparation by machinery Seeding Crop management 78.57 (weeding. rearrangement of fruits, etc.) Application of fertilizers 21:43 Application of insecticides and fungicides to 2. 1. 54.64 Sugar Mergins and 1 1 12 197.14 18 Watch 17.14 Protection from sunburn-Harvesting 14.62 Transportation ۰. Farming materials 27.90 - Seed 1.35 kg al 1445 🗄 181134° - Fertilizer and 10 112.52 -- Insecticides 63.61 5.18 3.57 74 45 - Fungicides - Lime . 5 - Pail Miscellaneous 818.91 Total (819) (Rounded) ÷., 263 111) Net return

Table - J 10 AGRICULTURAL PRODUCTS - WITHOUT PROJ (12) WATER MELON	ECT <u>Amount</u> (\$)
Table - J 10 AGRICULTURAL PRODUCTS - WITHOUT PROJ (12) WATER MELON	Amount
Table - J 10 AGRICULTURAL PRODUCTS - WITHOUT PROJ (12) WATER MELON	Amount
AGRICULTURAL PRODUCTS - WITHOUT PROJ (12) WATER MELON	Amount
 (12) WATER MELON I) Gross return (8 tons/ha x \$72/ton) 	Amount
<pre>I) Gross return (8 tons/ha x \$72/ton)</pre>	
	101
	• - 2
	576.00
a way a second	210100
11) [Production cost	
Land preparation by machinery	51.07
Seeding	23.21
Crop management	51.07
(weeding, rearrangement of fruits. etc.)	
Application of fertilizers	13.93
Application of insecticides and fungicides	35.52
Protection from sun burn	4.64
Harvesting	11.14
Transportation	4.08
- Farming materials	33.07
	20.00
- Fertilizers	108.75
- Insecticides	56.26
- Fungicides	31.81
¹⁹ 2. ¹ - Other materials	3.69
· - Pail	2.00
Miscellaneous	22.51
. Total	472.75
(Rounded)	(473)
na na ka na	162
III) Net return	<u>103</u>

Tal	AGRICULTURAL	RETURN PER HECTARE FOR PRODUCTS - WITHOUT PROJECT (CATTLE RAISING)
	, - y -	Karanatan Karanatan Karanatan
	معند به المعني ومعني عليه المعني م المعني المعني	Amount (S)
I)	Gross return	
	- Beef (130 kg liveweig - Milk (190 ()	nt) 79.30
	Total	102.86
	(Rounded)	(103)
11)	Production cost	
	for pastures and fenc - Cultivated pastur \$10/ha/3 x 0.6 ha - Natural pasture:	Bi and the international states and the second states in the second states and the second states and the second
	$\frac{5}{ha^4} \times 0.4 ha$	2.00
	2) Raising cost	2.00 - 1
	\$5/ha <u>/4</u> x 0.4 ha 2) Raising cost - Labour cost:	జాతు వారావు కాటి. నిరామణం సాలు అంది కాటించిన సార్ కి. కి. కి. కాటించి కాటించిన ప్రామణ్యం సార్
	\$5/ha <u>/4</u> x 0.4 ha 2) Raising cost - Labour cost: 2.0 head/ha x 0.0	జాతు వారావు కాటి. నిరామణం సాలు అంది కాటించిన సార్ కి. కి. కి. కాటించి కాటించిన ప్రామణ్యం సార్
	\$5/ha <u>/4</u> x 0.4 ha 2) Raising cost - Labour cost: 2.0 head/ha x 0.0 x \$730/man/year	జాత్యాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో స సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో స సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో సినిమాల్లో స
	<pre>\$5/ha/4 x 0.4 ha 2) Raising cost - Labour cost: 2.0 head/ha x 0.0 x \$730/man/year - Veterinary cost:</pre>	1 men/head
	\$5/ha <u>/4</u> x 0.4 ha 2) Raising cost - Labour cost: 2.0 head/ha x 0.0 x \$730/man/year	1 men/head
	<pre>\$5/ha/4 x 0.4 ha 2) Raising cost - Labour cost: 2.0 head/ha x 0.0 x \$730/man/year - Veterinary cost: 2.0 heads x \$0.7/ - Miscellaneous</pre>	1 men/head
	 \$5/ha/4 x 0.4 ha 2) Raising cost Labour cost: 2.0 head/ha x 0.0 x \$730/man/year Veterinary cost: 2.0 heads x \$0.7/ 	1 men/head

$\frac{12}{12}$	0.15 cows x 200 cow = 190
<u>/3</u> :	Land preparation and seeding by machinery : \$55.68/ha
	Seed (20 kg/ha) : \$20/ha
	Pences (100 m)
	Miscellaneous (include maintenance cost) : \$15.86/ha
	Total \$95.14/ha
	\$ 95.14/ha + 10 years (useful life) = \$10/ha
<u>/4</u> :	Estimated at about \$5/ha.

Table - J'11ECONOMIC NET RETURN PER HECTARE FORAGRICULTURAL PRODUCTS - WITH PROJECT(1)SUGAR CANE (PLANT CANE)	[
n	Amount
	(\$)
1) Gross return (150 ton/ha x \$12.6 ton)	1.890
II) Production cost	
Land preparation by tractor	49.98
2% Planting (15 M-D)	30.00
Basic fertilizer application - Machinery	17 10
Labourer (1 M-D)	17.12 2.00
Earthing and split fertilizer application	2.00
- Machinery (2 times)	26.84
- Labourer (2 M-D)	4.00
Irrigating,(12·M-D) Rodent.control (0.5 M-D x 2 times)	24.00 2.00
30^{10} Weeding (5 M-D x 2 times)	20.00
Harvesting	214.50
Transportation	247.50
Farming materials	75 60
\sim - Fertilizers : Compound $\frac{1}{2}$	75.60 115.50
St. 1 2 Statistics : Urea <u>12</u>	63.80
- Agro-chemicals : Harbicides <u>-</u>	18.50
: Rodenticides <u>/4</u>	8.70
Miscellaneous	46.00
Total	966.04
(Rounded)	(966)
111) Net_return	924
	<u></u>
<u>/1</u> 330kg (15:15:15)	
<u>/2</u> 220kg <u>/3</u> Atrazine 1.5kg	

Table - J 11	AGRICULTUR	- J. 24 - ET RETURN PER H AL PRODUCTS - W CANE. (RATOON C	ITH PROJECT	
				<u>Amount</u> (\$)
I) Gross re	turn (140 ⁻ ton	n/ha-x \$12.6/to		× <u>1.764</u>
II) Producti	on cost		3 mg 25 3 2 2 2	
Ratoon - Ro - Fi	ot cutting by	tractor	14 _ m = 15 = 49 - 44 	14.92
– Ma)))	مىلىكى بىرىكى بىرىكى بىرىكى بىرىكى بىرىكى بىرىكى بىرىكى بىرىكى ئۇرىكى بىرىكى بىرىكى بىرىكى بىرىكى بىرىكى بىرىكى ئىرىكى بىرىكى بىرىكى بىرىكى بىرىكى بىرىكى بىرىكى بىرىكى بىرىكى بىرىكى بىرىكى بىرىكى بىرىكى	atas 17:12 8 2.00.
° – Ma	ng and split chinery (1 ti bourer (1 M-I	fertilizer app ime) : : /	Dication	13.42
Rodent	g (5 M-D x 2	5 M-D x 2 times	میروید در به باری مربود در به ورد به در از در ۱۹۵۵ (میروید) میرود از میرود از مربود بازیر (ماروید)	<u></u>
Farmin	ortation g materials rtilizers	: Compound <u>/1</u> : Urea <u>2</u>	م مربق میں کی درمیں سو تو سے میں میں میں میں میں میں کی درمیں میں میں میں میں میں میں میں میں میں	231.00 115.50 .63.80
– Ag	ro-chemicals	: Herbicides : Rodenticides		18.50 8.70
Miscel	laneous	an a		36.96
	otal Rounded)			
III) Net retu	rn	ال المراجع من المراجع المراجع المراجع المراجع المراجع المراجع المراجع	است و مید است از این است این این است است این و می است این	988
<u>/1</u> 330k <u>/2</u> 220k	g (15:15:15) g			
	zine 1.5kg phosphate 3	kg		

Table - J 11 ECONOMIC NET RETURN PER HECTARE FO AGRICULTURAL PRODUCTS - WITH PROJE (3) COTTON	R CT
i na seconda da companya d Na seconda da companya da c	
	Amoun (S)
1) Gross return (3 ton/ha x \$509 ton)	1.527
II) Production cost	
Land preparation by machinery Seeding and basic fertilizer application	36.50
And the Machinery	17.12
- Labourer (1 M-D)	2.00
Reserving and thinning (5 M-D) Earthing and split fertilizer application	10.00
- Machinery - Labourer (1 M-D)	13.42
() - Labourer, (I N-D)	2.00
Cultivating by machinery	14.92
***・Applicationでof agro-chemicals by aircraft() いってTrigating (12 M-D)	24.00
Harvesting (67.M-D)	134.00
Transportation	30.00
• Other works. (4 M-D)	8.00
Farming materials	
Stel - Seed (25kg)	7.2
- Fertilizers : Compound $\frac{-1}{-1}$	67.2
: Urea $\frac{2}{-3}$ - Agro-chemicals : Herbicides $\frac{-3}{-4}$	52.20
$\frac{4}{1000} = \frac{4}{1000}$	7.07 305.2
- Sacks (40 sacks x US\$0.3)	12.00
d's Miscellaneous	41.4
Total (Rounded)	<u>870.03</u> (870)
111) Net return	657
	<u></u>
יישר איז	
<u>/1</u> 210kg (12:24:12)	
<u>/2</u> . 180kg	
- <u>/3</u> Planaxin 1.5kg	

ECONOMIC NET RETURN PER HECTARE FOR Table - J 11 AGRICULTURAL PRODUCTS - WITH PROJECT. . . . (4) MAIZE - _ _ _ _ _ _ Amount (\$) Gross return (4.0 ton/ha/x, \$180/ton) I) II) Production cost ្រុ សំខេត្តនៅប្រ A.C. See 1 Land preparation by machinery Seeding and basic fertilizer application; Leo 2000, 19, 52 Earthing and split fertilizer; application and split with the second sec - Labourer (1 M-D) Cultivating by machinery Application of agro-chemicals by aircraft(3 times) 17.13 Irrigating (5 M-D) Harvesting (5 M-D) - HE - AL - AL - 10.00 - 1 Shelling and drying - Machinery (8 hrs) - Labourer (4 M-D) 6.88 8.00 Inner transportation by tractor Other works (2.2 M-D) 4.40 :

 Farming materials

 - Seed (16kg)

 - Fertilizers

 : Compound

 . Urea/2

 - Agro-chemicals : Herbicides $\frac{73}{3}$ 49.30 7.07 : Insecticides 58**.**70 . Miscellaneous 17:20 Tota1 361.22 (Rounded) (361) III) Net return . _. _ ه ه ۲۰۰۰ م 210kg (12:24:12) $\overline{21}$ 170kg -2 /3 Gesaprim 1.5kg ય હી સ્કોઇન્સ 14 Dipterex 3 (, Furadan 10kg

Table - J 11 ECONOMIC NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITH PROJECT (5) SORGHUM Amount (\$)I) Gross return (4 ton/ha x \$163'ton) <u>652</u> II) - Production cost Land preparation by machinery 36.56 Seeding and basic fertilizer application - Machinery - Labourer (1 M-D) 17.12 2.00 Earthing and split fertilizer application - Tractor - Labourer (1 M-D) 13.42 2.00 Cultivating by machinery 14.92 Application of agro-chemicals by aircraft (1 time) 5.71 % [rrigating (5 M-D) 10.00 Harvesting (4 M-D) 8.00 Threshing and drying Machinery (6 hrs) 6.96 Labourer (2 M-D) 4.00 Inner transportation by tractor 9.08 Farming materials - Seed (15kg) - Fertilizers : Compound <u>1</u> : Urea <u>/2</u> 15.75 67.20 49.30 - Agro-chemicals : Herbicides -3 : Insecticides -7.07 46.40 Miscellaneous Total (Rounded) 15.77 331.26 (331) 111) Net return 321 سيرية فاست فالمتحاف والأراب الأراب -----<u>/1</u> 210kg (12:24:12) <u>/2</u> 170kg 73 Gesaprim 1.5kg <u>74</u> Dipterex 4 (

- J 27 ---

ECONOMIC NET RETURN PER HECTARE FOR Table - J 11 AGRICULTURAL, PRODUCTS - WITH PROJECT (6) BEANS Amount **(S)** Gross return (2.0 ton/ha x \$264(ton)) I) ĩ II) Production cost Les. & a i ft frite i, t Land preparation by machinery design in the second states 36.56 Seeding and basic fertilizer application 17.12 - Machinery - Labourer (1 M-D) Reseeding (2 M-D) Application of agro-charical but and a start of agro-charical but and a start of a s Application of agro-chemicals by sprayer - Machinery (19.2 hrs) - Labourer (2.4 M-D) 4.80 Cultivating by machinery 14.92 10.00 Irrigating (5 M-D) Harvesting (10 M-D) 20,00 **5.80 4.40** Threshing and drying - Machinery (5 hrs) - Labourer (2.2 M-D) Inner transportation by tractor 5.45 Other works (2.8 N-D) Rarming metarials Farming materials : Compound 1 . - Seed (45kg) 18.00 - ; - ; . - Fertilizers - Fertilizers : Compound : Urea <u>/2</u> - Agro-chemiclas : Insecticides <u>/3</u> 70.00 11.60 -, - **10.16** Miscellaneous 13.29 · · . . . A. A. . Total 279.04 (Rounded) 111) Net return 200kg (15:15:15) 71 1. . 187 3 40kg `___ · 12 23 Molathion 2 (

able - J 11 ECONOMIC NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITH PROJEC (7) SESAME	а 7 Т
	Amount (\$)
I) Gross return (1.5 ton/ha x \$330/ton)	495
and the second	
[]). Production cost	
State about the second se	<u> </u>
Seeding and basic fertilizer application	36.56
Trai - Machinery	17.12
Labourer	2.00
Earthing and split fertilizer application	
Machinery	13.42
= (1 M-D)	2.00
Conclusion by machinery	14.92
Application of agro-chemicals by aircraft (Irrigating (7 M-D)	2 times)11.42 14.00
Harvesting (2 M-D)	4.00
St. Threshing and drying (2 M-D)	4.00
Som Inner transportation by tractor	6.81
Other works (thinning, etc. 2 M-D)	4.00
Farming materials	
	1.2
$\frac{1}{\sqrt{2}} = \text{Pertilizer} : \text{Compound} \frac{1}{\sqrt{2}}$	25.60
$\frac{1}{1}$	20.30
Agro-chemicals : Herbicides <u>/3</u> : Insecticides <u>4</u>	9.42 11.60
	9.92
Miscellaneous	J • J 6
Total	208.29
(Rounded)	(208)
	~~-
1) Net return	287

.

2

<u>/1</u> 80kg (12:24:12) <u>/2</u> 70kg <u>/3</u> Herban 2kg <u>/4</u> Dipterex 1 (

Table - J 11ECONOMIC NET RETURN PER HECTARE FOR
AGRICULTURAL PRODUCTS - WITH PROJECT
(8)(8)RICE (WET SEASON)

Amount ·(\$) Gross return (5.0 ton/ha x \$201/ton) 1) 1.005 . . . 11Production cost Land preparation by machinery the state of the second by 36.56. Seeding and basic fertilizer application - Machinery - Labourer (1 M-D) Split fertilizer application (1.5:M-D). Application of agro-chemicals by aircraft 3: times) 17.13 Weeding (5 M-D) Irrigating (2.8 M-D) Harvesting by combine (2.5 hrs) - compine (2.2 hrs) - Assistant operator (2.5 hrs) Transportation by truck Other works (1 M-D) Farming materials - Seed (70kg) - Fertilizer : Compound : Urea - Agro-chemicals 49.30 89.18 20.32 - Agro-chemicals : Herbicides /1 20-32 Fungicides 47.80 Miscellaneous^{*} · · · · ___23.57 È Total 494.88 (495) III) Net return /1 Propanil 20 (, 2-4 D 3 (2 Malathion 4 (73 Kasumin 20kg

[©]J`30[™]

Table - J 11 ECONOMIC NET RETURN PER HECTAR AGRICULTURAL PRODUCTS - WITH P (9) RICE (DRY SEASON)	E FOR ROJECT
(9) RICE (DRY SEASON)	ROJEC I
E 2011 (β) − 241 (β) − 1 − 1 − 1 − 1 Ne down awraeg ar (β) − 1 − 1 − 1 − 1 − 1 − 1 − 1 − 1 − 1 −	Amount
and the sping sector of the state of the sta	(\$)
I), Gross return (5.0 ton/ha x \$201/ton)	1,005
TT Developed to an annual	
II). Production cost	
*	36 56
Seeding and basic fertilizer applicati	36.56
A Anthinery	17.12
Labourer, (1 M-D)	2.00
Split fertilizer_application (1.5 M-D)	
Application of agro-chemicals by aircr	
Weeding (5, M-D)	10.00
Ja Trrigating (4 M-D) Ac Harvesting by combine	8.00
Constant Combine (2.5 hrs)	54.95
Assistant operator (2.5 hrs)	1.25
Transportation by truck	18.50
Other works (1 M-D)	2.00
Farming materials	20.40
Seed (70kg) - Fertilizers : Compound <u>1</u>	29.40 67.20
	49.30
: Urea $\frac{7}{4}$ Agro-chemicals : Herbicides $\frac{7}{4}$	89.18
: Insecticides <u>-4</u>	20.32
Fungiudes	47.80
Miscellaneous `	23.69
	407 40
Total (Rounded)	$\frac{497.40}{(497)}$
	(3)17
်က ကြင့်နောက် ဖြစ်သောက ကျေးများကို ကျောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြေ ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြေ ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြေ	
(11) Net return	508
· · · · · · ·	<u> </u>
<u>/1</u> 210kg (-12:24:12)	
<u>/2</u> 170kg	
<u>/3</u> Propanil 20 (. 2-4 D 3 (
/4 Malathion 4 (
$\sum_{i=1}^{n} \sum_{i=1}^{n} \frac{1}{2} \sum_{i=1}^{n} $	

- .<u>/5</u> Kasumin 20kg

ECONOMIC NET RETURN PER HECTARE FOR Table - J 11 AGRICULTURAL PRODUCTS *** WITH PROJECT -(10) MELON (Statistical Statisticae Stati Amount (\$) • · · · 1 · 352 · · Gross return (6.5 ton/ha x \$208) # [] anda de mile II) Production cost ∠ ः स्टॉर्ड क्रुंटेन के**.36.56** -Land preparation by machinery Bed preparation and seeding 13.42 W 13.42 - Machinery - Labourer (4 M-D) Weeding: (20 M-D) Application of agro-chemicals by sprayer: (3 times) - Machinery (sprayer) 3.96 9.00-(19.1) (19 - Labourer (4.5 M-D)Watch (20 M-D) Watch (20 M-D)Irrigating (6 M-D)Rearrangement of fruits (10 M-D)20.00Harvesting (20 M-D) Inner transportation by tractor 14 PT 11 4 - 1 - 1 4 .80 Other works (2.4 M-D); Farming materials 4 . "4 ··· 43 ··· 5 · . - Seed (1.5kg) 20.93 - Seea (1.5Kg) - Fertilizers : Compound <u>/1</u> ື້ 185 - 50 - Agro-chemicals : Insecticides <u>/3</u> 66.70 153.34 : Fungicides <u>/4</u> - Pail 5.00 Miscellaneous . **38.62** -िंग ु Total 811.04 (Rounded) (811) . III) Net return 2.5 530kg (15:15:15) /1 230kg 12 2 - 5V 3 Orthene 4kg, Lannate 1kg, Tomaron 2 (. Dipterexe 1kg 14 Dithane M-45 7kg, Benlate 1kg, Daconil 1kg

· . .

Table - J 11 ECONOMIC NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITH PROJECT (11) WATER MELON		
	Amount	
n en la constante de la constan La constante de la constante de La constante de la constante d	(\$)	
The Grand maturine (12 Armster and 1)	,	
I) Gross-return (12 ton/ha x \$72 ton)	<u>864</u>	
11) Production cost		
Land preparation by machinery	36.56	
Bed preparation and seeding		
- Machinery - Labourer (4 M-D)	13.42	
Split fertilizer application (2 M-D)	8.00	
Weeding (20 M-D)	4.00 40.00	
Application of agro-chemicals by sprayer (3 times)	
📜 🗇 – Machinery. (sprayer)	3.96	
Set The Television (14 5 M D)	9.00	
Watch' (10 M-D)	20.00	
a filigating (O M-D)	12.00	
Rearrangement of fruits (10 M-D) Harvesting (10 M-D)	20.00	
Transportation	20.00	
Other_works (2.4 M-D)	40.86 4.80	
Farming materials	1.00	
- Seed $(1.5kg)$	15.00	
- Fertilizers : Compound : Urea <u>/2</u>	105.00	
: Urea <u>74</u>	34.80	
$-$ Agro-chemicals : Insecticides $-\frac{3}{4}$	81.44	
Fungicides <u>4</u>	41.17	
— Pail Miscellaneous	5.00 25.75	
•	27.17	
Total	540.76	
(Rounded)	(541)	
ا او میر باد کار اور این این اور اور این این این اور اور این این این اور اور این این اور اور این این اور اور ای		
	202	
111) Net return	323	
<u> </u>		
<u>/2</u> 120kg		
3 Orthene 4kg		

ECONOMIC NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITH PROJECT Table - J 11 (12) VEGETABLE (TOMATOES) Amount 🚲 (\$) er Aller and an Gross return $\frac{\sqrt{1}}{\sqrt{1}}$ (20 ton/ha) I) II) Production cost a Land preparation by machinery Growing of seedlings (10 M-D) Field operation for transplanting - Machinery - Labourer (4 M-D) Weeding (20 M-D) Split fertilizer application (2 M-D) Irrigating (6 M-D) Application of agro-chemicals by sprayer (5 times) Application of agro-chemicals by sprayer (5 times) - Machinery - Labourer (10 M-D) - Labourer (10 M-D) Cultivating by machinery (2 times), 29.84 Harvesting (90 M-D) Inner transportation Other works - Seed - Fertilizers : Compound (15:15:15 530kg) 185.50 : Urea (230kg) 66.70 - Seea - Fertilizers : Compound (15:15:15, 500mg) : Urea (230kg) - Agro-chemicals : Insecticides <u>/2</u> : Fungicides <u>/3</u> 50.00 66.08 Miscellaneous Total. 1.387.64 (1,388)III) Net-return

<u>71</u> Yield: 20 ton/ha (1.430 case). Price : \$1.5 case
<u>72</u> Dipterex 16kg, Malathion 16kg, Tomaron 4 (
<u>73</u> Dithane M-45 20kg. Caprantol 20kg

- J.35 -Table - J 12 FINANCIAL NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITHOUT PROJECT (1) SUGAR CANE (ESTATE FARM) I) Gross return - Plant cane (100 ton/ha x \$9.37/ton) - Ratoon cane (90 ton/ha x \$9.37/ton) Plant Ratoon Cane Cane (\$) (\$) 937.00 843.30 (843)11) Production cost Land preparation (by machinery) Planting or ratooning Application of fertilizers 55.71 32.14 12.86 Application of fertilizers Application of agro-chemicals Irrigating Weeding Harvesting Transportation Other works 20.71 20.71 4.29 4.28 96.42 96.42 42.86 42.86 143.00 128.70 165.00 148.50 -Other works (earthing etc.) 50.00 50.00 Farming materials - Seed (6 ton/ha) - Fertilizers - Agro-chemicals Miscellaneous 56.22 88.40 88.40 24.47 24.47 38.96 30.86 <u>648.</u>06 <u>818.</u>18 (818)(648) III) Net return 119 195 -----

FINANCIAL NET RETURN PER HECTARE FOR Table - J 12 AGRICULTURAL PRODUCTS WITHOUT PROJECT (2) SUGAR CANE (OUTGRAWERS! FARM) Plant Ratoon $\frac{Cane}{(\$)} \qquad \frac{Cane}{(\$)}$ $\frac{843.30}{(843)} \qquad \frac{749.60}{(750)}$ I) Gross return

Plant cane:
(90 ton/ha x \$9.37/ha)
Ratoon cane:
(80 ton/ha x \$9.37/ha)

II) Production cost

Land preparation by machinery
Planting or ratooning
Application of fertilizers
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
20.71
21.21
21.21 /1 Plant cane: Costs of farming materials (\$244.33) x Interest rate (11%) = \$26.88 Ratoon cane: \$86.34 x 11% = \$9.50

DIE - J 12 FINANCIAL NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITHOUT PROJECT (3) SUGAR CANE (EXPANDED OUTGRAWERS' FARM) Table - J. 12 ... FINANCIAL NET RETURN PER HECTARE FOR

- - J 37 -

a 1777 - 179 Bartanan Manakan Bartan Januar Ing Kabupatén Ing Kabupatén Ing Kabupatén Ing Kabupatén Ing Kabupatén Ing Kabupatén Plant Ratoon Cane Cane (\$) (\$) I) Gross return - Plant cane (80 ton/ha x 749.60 655.70 (750)(656) (80 ton/ha x \$9.37/ha)
Ratoon cane
(70 ton/ha x \$9.37/ha)
11) Production cost
Land preparation by machinery 64.29 Co. TPlanting and rationing 21.43 35.71 - Application of fertilizers 20.71 20.71 Application of agro-chemicals 3.57 4.29 . A. Weeding 42.85 28.57 - Harvesting -114.40 100.10 Transportation 132.00 115.50 ther works 50.00 67.14 La Farming materials - Seed (10 ton/ha) - Fertilizers - Agro-chemicals 93.70 79.20 79.20 7.14 7.14 31.46 22.92 Miscellaneous <u>Interest</u> on working capital $\frac{r_1}{r_1}$ 26.88 9.50 L. IIIUET - ----Tota 1 687.63 490.78 (Rounded)* * (688) (491) لائي وال ميرين وال مرين ميرين ما 2 III) Net return 62 165 · .---- ., -<u>/1</u> Plabt cane: Costs of farming materials (\$244.33) x Interest (11%) = \$26.88

Ratoon cane: \$86.34 x 11% = \$9.5

- J 38 -FINANCIAL NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITHOUT TOO Table - J 12 AGRICULTURAL PRODUCTS - WITHOUT PROJECT AGRICULTURAL PRODUCTS - (4) COTTON ÷.,* Amount (\$) Gross return (2 ton/ha x \$562/ton) Production cost Land preparation by machinery Seeding Resowing Pinching Cultivating by machinery Application of fertilizer Weeding Application of agro-chemicals by air plane 140.00 Application of agro-chemicals by air plane 140.00 Application of agro-chemicals by air plane 143 Harvesting Other works Transportation Farming materials I) Gross return (2 ton/ha x \$562/ton) II) Production cost Farming materials ిషి కా కటించి చిన్న 10,00 - Seed (25 kg/ha) - Fertilizers - Agro-chemicals - Sacks, string, etc. scellaneous iterest on working capital /1 25.83 Miscellaneous Miscellaneous Interest on working capital $\frac{1}{2}$ <u>712.02</u> (712) <u>412</u> Total (Rounded) • , 111) Net return ····

<u>/1</u> Cost of farming materials. (\$403.52) x Interest rate (6.4%) = \$25.83

 Table - J 12
 FINANCIAL NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITHOUT PROJECT (5) MAIZE (SEMI-MECHANIZED FARMING)

Amount (\$) I) Gross return (2.0 tons/ha x \$124/ton) 248 II) Production cost Land preparation by machinery Land preparation by machinery Seeding and fertilizer application Application of split fertilizer Cultivating by machinery 35.71 10.71 4.29 Application of agro-chemicals Weeding and other works 11.43 7.14 Weeding and other works Harvesting Transportation Farming materials - Seed - Fertilizers - Agro-chemicals Miscellaneous Interest on working capital <u>/1</u> 5.36 19.65 7.14 7.04 • • 37.14 35.71 9.07 4.70 Total 195.09 (Rounded) (195) فيستنقد والأجريارية المائير وستعير وماجزته وبابيو بسر وغ III) Net return <u>53</u>

<u>/1</u> Costs of farming materials (\$127.03) x Interest rate (3.7%) = \$4.70

•

FINANCIAL NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITHOUT PROJECT (6) MAIZE (TRADITIONAL FARMING) Table - J 12

	میں میں میں میں میں میں میں بین ہیں ہیں۔ یہ ہیں ہیں کی اور این کی دین ہی ہی ہے ہیں ہے ہیں۔ اس میں میں این میں م اس میں میں این ہی ہے کہ این کی این ہیں ہیں ہیں ہیں ہیں ہی ہی ہی ہی ہی ہے ہیں ہی ہیں ہی ہیں ہی ہی ہی ہی ہی ہی ہی اس میں ہی	Amount (\$)
I)	Gross return (1.6 tons/ha x \$124/ton)	<u>198</u>
	المحمد المحم المحمد المحمد المحمد المحمد المحمد	
11)	Production cost	
	Land preparation Seeding	28.57
	Application of agro-chemicals Weeding and other works	7.14 38.95 15.72
	Harvesting and threshing Transportation Farming materials	5.71
	- Seed - Agro-chemicals	
	Miscellaneous	7.48
	میں آپنین پر کار ہے جہ پر قاد میں ان جب ہے ان کار سین ہے ا	19 Land 1997 1- 31 21 4
	Total (Rounded)	<u>157.03</u> (157)
III)	Net return	<u>41</u>
		الأعرك والمائلة فا

- J 41 -Table - J 12 FINANCIAL NET, RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITHOUT PROJECT (7) SORGHUM (SEMI-MECHANIZED FARMING)

and the second	
	Amount
	(\$)
1) Gross return (2.0 tons/ha x \$102/ton)	204
II) Production cost	
Land preparation by machinery	
Seeding and basic fertilizer application	35.71
Application of agro-chemicals	5.71
Application of split fertilizer	4.29
Weeding and other works	4.29
Harvesting and thresting	17.86
Transportation	22.33
Farming materials	7.14
Seed: (10 kg)	
Fertilizers	6.6
- Agro-chemicals	37.14
Miscellaneous	16.07
Interest on working capital $\frac{1}{2}$	7.85
A second working capital	3.53
Total	168.52
(Rounded)	(169)
	(10))
TII) Net return	35
	<u>35</u>
n - ,	

. <u>/1</u> Costs of farming materials (\$95.52) $\frac{1}{1-1}$ Costs of farming materials (\$95.52) $\frac{1}{1-1}$ Costs of farming materials (\$95.52) x Interest rate (3.7%) = \$3.53 • .

-

-

Table - J	12 FINANCIAL NET	- J 42 - RETURN PER	HECTARE FOR		
			والمستحد والمستحد المستحد والمستحد والمستحد والمستحد والمستحد والمستحد والمستحد والمستحد والمستحد والمستحد والم	ECT	
					13
	ده است. این دور دور است. ده استان این میرو استان ا		warnesine is around you nu toy to t	ېزونو ور بې د ورو ور	and the property of a series of the series o
				<u>Α</u>	mount (S)
				2000 (* 75 - 2 ⁴ * 7	
	Gross return (1.6 tor (Rounded)	ns/ha x \$102,	/ton)	1	<u>63.20</u> (163)
	*	· · · - ·			
· I1)	Production cost	و دو ري مير المراجع : ري المراجع :			
	Land preparation Seeding Application of fer Application of agr Weeding and other	o-chemicals works		しんしょう かくりつ ひとう しんしょう しんしょう しんしょう ひんしょう しんしょう しんしょ しんしょ	28.57 5.71 4.29 4.29 17.86 17.86
	Harvesting and three Transportation	é su tug			5.71
	Farming materials		1		
-	- Seed		The second se	ži z de de la seconda de la	4.62
	- Fertilizers		4		37.14 ~7.14 °
* 00	- Agro-chemicals Miscellaneous	•		n in the state of the	6.66
	·**	ي د هم محمد المحمد ا			
	2 ⁴		<u>_</u>		
	Total (Revelat)	-		<u> </u>	<u>39.85</u>
u	(Rounded)		• •	ي ۾ آهن ۽ جيءَ آهن.	
111)	Net return	، من من ال			23

بب

....

Table - J 12 FINANCIAL NET, RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITHOUT PROJECT (9): SESAME

r

.

	Amount
	(\$)
E) Gross return (1.3 tons/ha x \$330/ton)	429.00
II); Production cost	
Land preparation by machinery	27.50
Seeding and basic fertilizer application	8.57
Thinning Solar	4.29
Cultivating and earthing by machinery	17.86
Application of split fertilizers	3.57
Application of insecticides	8.57
CHANT Harvesting a	21.43
Transportation	8.57
Figg Farming materials	
and the second	5.28
Fertilizers	72.86
- Insecticides	14.29
Miscellaneous /1	19.28
Interest on working capital $\frac{1}{2}$	6.34
the first of the second s	218.41
(Rounded)	(218)
(nounded)	
and the second	
III) Net return	211
the second s	<u></u>
A 1	

 $\frac{1}{1}$ Cost of farming materials (\$137.79) x Interest rate (4.6%) = \$6.34

	میسور بی ۲۰۰۰ از این کار این از آن محمد با ۲۰۰۰ ا	
	2	
	· · · · · · · · · · · · · · · · · · ·	
	*. * <u>*</u>	ا ما ما ها میرونده کارم در این میروند. این از این از میروند کارم این از میروند این م این میروند این میروند ا
		n na na sana na katala na sana na sana na sana na sana na sana na sana na katala na sana na sana na sana na sa Ina na sana na s
Table -	J 12 FINANCIAL NET RETURN AGRICULTURAL PRODUCTS	
	من جو - من	
	(10) RICE (PADDY)	
		ا مېلىكى مەكلىرى ئىلىكى ئەركىلى بېيىرىشى ئىرىكى بىر <u>مەركى ئىرىمى ئىرىمى بىرىكى بىلىكى بىلىكى بىلىرىكى بىلىرىكى</u> مەكلىكى بىرىكى بىرىك
	-* -* -* -* -*	این کار میں والد کی میں اور ایک کار ایک کار میں میں ایک کار میں اور ایک کار میں ایک کار میں ایک کار میں ایک کا افراد کار میں ایک کار میں ایک کار میں میں کار میں میں کار میں میں ایک کار میں کار میں کار میں کار میں کار میں ک ایک کار میں ایک کار میں کار میں میں کار میں میں کار میں کار میں میں کار میں کار میں کار میں کار میں کار میں کار
		Amount
		(S)
- 1	a strong (2 ton /her the SIG	8/fon)
I)	Gross return (3 ton/ha x \$19	Of COILY States and a state of the state of
11)	Ducduction cost	and the second states and the second states and
11)	Production cost	
	Land preparation by machin	ery 42.86
	Seeding by machinery	1. 1
	Application of fertilizers	
	Application of herbicides	ssint at a set a 14.29
	Application of insecticide	s and fungicides 11.43
	Weeding and other works	17.86 Jan 17.86
	Control for birds damage	2.14-
	Harvesting and threshing	60 . 32
	Transportation	
	Farming materials	
	- Seed	39.00
	- Fertilizers	77.14 70.00
	- Herbicides	
	- Insecticides and fungi	19.49
	Miscellaneous Interest on working capita	
	interest on working capito	
•		
	Total	421.18
	(Rounded)	(421)
	(nounada)	
	•	and the second and the second seco
III)	Net return	173
,		a na ana ana ana ana ana ana ana ana an
	*	
	الم	
	<u>/1</u> Costs of farming materia	
	x Interest rate (4.6%) =	: \$11.98
	•*•	الشعر يداهر والجي واليوانية الخمر أوالا والمناف

A set of the set of	
Table - J. 12 FINANCIAL NET RETURN PER HECTARE FOR	
AGRICULTURAL PRODUCTS - WITHOUT PROJECT	
(11) MELON	
 Construction of the state of th	
n an an Anna an Anna an Anna Anna	
na na sa kana kana ing pang kana ing pang kana ing pang kana kana kana pang kana pang kana pang Kana ing kana kana ing pang kana kana kana kana pang kana pang kana pang kana pang kana pang kana pang kana pan Kana ing kana kana ing pang kana kana pang kana pan	
مان در می	
A BARRAN A CONTRACTOR AND A	1-0-0-4
	Amount
	(\$)
1) Gross return (5.2 tons/ha x \$208)	1,082
	1,002
II) Production cost	
Land preparation by machinery	78.57
Seeding-	35.71
Arrist Crop management	78.57
(weeding, rearrangement of fruits, etc.)	21 42
Application of insecticides and fungicides	21.43
The second se	54.64
Protection from sunburn	7.14 17.14
Harvesting	42.52
Transportation	14.62
Farming materials	21100
	27.90
- Fertilizer	125.06
- Insecticides	77.60
E. E. Fungicides	43.87
	3.57
WALL - PAINT	3.57
Winner Miscellaneous	63.19
Interest on working capital	10.29
ی سی≮r ج _ا ،	705 30
Total	$\frac{705.39}{(705)}$
(Rounded)	(705)
and a second give many signed a second se	
	377
III)=M.Net return	
a series a series of the series and the series rates a series that an and want or a	

/1 Costs of farming materials such as seed, fertilizers and agro-chemicals (\$278) x Interest rate (3.7%) = \$10.29

		J_46,	د دون به ود ما تسبی می در در می ودی دست. معاد می در می تشوید می در می در می تشوید مربعه معاد می در می تشوید می در می در می	
	-			
	~ .A			
	دراد		اً پې پې کې د د د د د د د د د د د د د د د د د د	
Table - J 12	FINANCIAL NET	, RETURN PER, HECI	ARE FOR WARE 1.1.7	
	AGRICULTURAL	PRODUCTS WITHO	UT PROJECT	
	(12) WATER M			
				·
<u></u>	· · · · · · · · · · · · · · · · · · ·	مريد مريد مريد مريد مريد مريد مريد مريد	مېر مېر مېر د د د مېر مېر د د د مېر مېر د در مېر مېر د در مېر مېرو د د د مېر مېرو د د د مېر مېرو د د د مېر مېرو د د د	
			NY	ount
. •				S)
		11	ೆಲ್ಲಿ ಇಂತ್ರಿಸಿ ಆಕ್ರೆಕೆ	6 The second sec
I) Gro	oss return (8 tonš,	(na. x. 3/2/ con) ;;	1	
		· , '~		· · · · · ·
TT) Dec.	Justion and			
•	duction cost	· · · · ·		1111 1111 1111 1111 1111 1111 11111 1111
	and preparation by	y machinery		1.07
S	Seeding, 👔 🦾 🖓			23.21
(rop management			
	(weeding, rearra	ngement of fruit	S, euc.//	3 93
ار بر جو	pplication of fer	billizers		5.52
	Application of ins Watch	eculcides and, it		4.64
	rotection from su	n hurn		1:14
	larvesting	in for the second	یه کر آده داد. و است از سال می است است است ا	37.14
	Fransportation			3.06
	Farming materials	· *		
-	- Seed	*		20.00
	- Fertilizers	t		75:00
	- Insecticides			38.80
***	- Fungicides, '			21.94
	- Lime 🚬 🐇 🗧			2.64
	- Pail	· .		2.00 21.06
. 1	Miscellaneous		, నివ్విశిష్తి కి.	5:86
	Interest on workin	g_capital	ನಾಜ್ಯವನ್ <i>ಗೆ ಇವನ್ನು</i> ಜ್ಞಾನಿಸಿ	
	18 * -	· · · · · · · · · · · · · · · · · · ·		5 2 Î î î
	Total	-	4	18:08
	(Rounded)	یائی چ ب		(448)
÷	, , , , , , , , , , , , , , , , , , , ,	× • • • • •		
	L.	· · · · · · · · · · · · · · · · · · ·		
III) - Ne	t return	ور سال کې کې کې کې د مند م پې		2 <u>8</u> :
·		· · · · · ·		
<u> </u>		· · · · · · · · · · · · · · · · · · ·		<u> </u>
•••• • <u>•</u> • •		د همین جدید میشند می ویردن بن مست وربین مربع این	and the second se	
	· · ·			,

<u>/1</u> Costs of farming materials such as seed, fertilizer and agro-chemicals (\$158.38) x Interest rate (3.7%) = \$5.86

.

and a strategy of the second	
Table, - J.12. FINANCIAL, NET-RETURN PER HECTADE FOR	
Table - J 12. FINANCIAL NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITHOUT PROJECT	
(13) · PASTURE (CATTLE RAISING)	
n na shekara na shekara na shekara za na shekara na shekara na shekara na shekara na shekara na shekara na she Na shekara na shekara n	
	_
الم دري بري دري بري دري مي دري بري دري الم دري بري دري بري دري بري بري بري بري بري بري بري بري بري ب	<u> </u>
	Amount
	(\$)
T) Gross return.	
1) Gross return Beef (130 kg liveweight) $\frac{1}{1}$	
$\frac{130 \text{ kg liveweight}}{130 \text{ kg liveweight}}$	45.50
- Milk (190 f) /2	23.56
the second s	60.06
Total (Rounded)	<u>69.06</u> (69)
 A STACK SWATC DE LEUR AND AND AND AND AND AND AND AND AND AND	(07)
(a) Support of the second sec second second sec	
II) Production cost	
Recovery of initial investment	
for pastures and fences	
- Style of Sec-Cultivated pastúre: \$10/ha- x 0.6 ha	6.00
Cultivated pasture: $\frac{3}{10} \times \frac{3}{10} \times \frac{3}{10} \times \frac{3}{10}$ Natural pasture: $\frac{310}{ha} \times \frac{3}{10} \times 3$	2.00
2) Raising cost	
- Labour cost:	14.31
x \$730/man/year	
veterinary cost:	0.98
1.96 heads x \$0.5 head	1 53
Miscellaneous	1.53
Errer Totalis in the second	24.82
(Rounded)	$\frac{27782}{(25)}$
in the second	• • •
in the second	
III) Net return	<u>44</u>
$\frac{1}{1}$ 0.4 head x 320 kg/head = 130 kg (liveweight	:)
	,
$\frac{12}{2}$ 20.73 cows x 260(/cow = 190 (
13 Land preparation and seeding by machinery :	\$55.68. ha
Seed (20kg/ha)	\$207 ha
Fences (100m)	\$3.6/ha
Miscellaneous (include maintenance cost) :	\$15.80, ha
whether the Total	595.14 na
\$95.14/ha + 10 years (useful life) = \$10 ha	4

FINANCIAL NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITH PROJECT Table - J 13 (1) SUGAR CANE (PLANT CANE) the state of the s Amount <u>ू स (\$) स</u>्य I) Gross return (150 ton/ha x \$9.37/ton) 1:405:50 (Rounded) the comparison of the second II) Production cost Studie 1 · 3-1-40.98 49.98 Land preparation by tractor 30.00 Planting (15 M-D) Basic fertilizer application - Machinery Earthing and split fertilizer application - Machinery (2 times) - Labourer (2 M-D) 26,84 --4.00

 Irrigating (12 M-D),
 24.00

 Rodent control (0.5 M-D x 2 times)
 2.00

 Weeding (5 M-D x 2 times)
 20.00

 214.50 Harvesting 247.50 Transportation a . j . - ' Farming materials - Seed cane (6 tons) 56.22 79.20 - Fertilizers : Compound (15:15:15 330kg) : Urea (220kg) 44.00 - Agro-chemicals : Harbicides (Atrazine 1.5kg) 12.75 : Urea : Rodenticides(Zinc phosphate 3kg) 6.00 Miscellaneous 41.81 Interest on working capital $\frac{1}{2}$ 21:80 نې سې و نو دې د د سال کې مورې د د د د د مور مور مې د ... د ... د ... د ... د ... د کې د Total 899.72 (Rounded) ·(900),-120 and the and the state of the second s III) Net return 506 S والمحاجبة والمعادية والمعادة and and the second s /1 Costs of farming materials and machinery (\$198.17)
x Interest (11%) = \$21.80 x Interest (11%) = \$21.80 + interest (11%)

1	n yan ang ang ang ang ang ang ang ang ang a	
AGRICULTURAL PRODUCTS = WITH PROJECT (2) SUGAR CANE (RATOON CANE) (2) SUGAR CANE (RATOON CANE) (1) Gross return (140 ton/ha x \$9.37/ton) 1,311.8 (Rounded) (1312) (1) Production cost (Rationing (1312) (1312) (Rounded) (1312) (Rounded) (1312) (Rounded) (14.92 (Rounded) (14.92 (Rounde) (15.15.15.300 kg) (Rounde) (15.15.15	and a first second s The second se The second se	
AGRICULTURAL PRODUCTS = WITH PROJECT (2) SUGAR CANE (RATOON CANE) (2) SUGAR CANE (RATOON CANE) (1) Gross return (140 ton/ha x \$9.37/ton) 1,311.8 (Rounded) (1312) (1) Production cost (Rationing (1312) (1312) (Rounded) (1312) (Rounded) (1312) (Rounded) (14.92 (Rounded) (14.92 (Rounde) (15.15.15.300 kg) (Rounde) (15.15.15		
Amount (8) I) Gross return (140 ton/ha x \$9.37/ton) 1.311.8 (1312) II) Production cost Rationing 1.5:24-54 (Rounded) 1.311.8 (1312) III) Production cost Rationing 1.5:24-54 (Rounded) 1.311.8 (1312) III) Production cost Rationing 1.5:24-54 (Rounded) 1.311.8 (1312) III) Production cost Rational for the state of the s	AGRICULTURAL PRODUCTS = WITH PROJECT	
Amount (8) 1) Gross return (140 ton/ha x \$9.37/ton) 1,311.8 (1312) II) Production cost Ratooning graties Ratooning grates Ratooning grates Ratooning grates Ratooning grates Ratooning gra	νομη ματο <u></u>	
Amount (8) 1) Gross return (140 ton/ha x \$9.37/ton) 1,311.8 (1312) II) Production cost Ratooning graties Ratooning grates Ratooning grates Ratooning grates Ratooning grates Ratooning gra		
Amount (8) 1) Gross return (140 ton/ha x \$9.37/ton) 1,311.8 (1312) II) Production cost Ratooning graties Ratooning grates Ratooning grates Ratooning grates Ratooning grates Ratooning gra	,* * 1 	
I) Gross return (140 ton/ha x \$9.37/ton) 1) Gross return (140 ton/ha x \$9.37/ton) 1.311.8 (Rounded) (1312) 11) Production cost (14.92) 12.11.8 (1312) 13.11.8 (1312) 14.92 (14.92) 15.11.1 (14.92) 16.11.1 (14.92) 17.12 (14.92) 18.51.2 (14.92) 19.11.2 (14.92) 11.11.2 (14.92) 11.11.2 (14.92) 12.11.2 (14.92) 13.11.2 (14.92) 14.92 (14.92) 15.11.2 (14.92) 15.11.2 (14.92) 15.11.2 (14.92) 15.11.2 (14.92) 15.11.2 (14.92) 15.11.2 (14.92) </td <td></td> <td></td>		
I) Gross return (140 ton/ha x \$9.37/ton) 1) Gross return (140 ton/ha x \$9.37/ton) 1.311.8 (Rounded) (1312) 11) Production cost (14.92) 12.11.8 (1312) 13.11.8 (1312) 14.92 (14.92) 15.11.1 (14.92) 16.11.1 (14.92) 17.12 (14.92) 18.51.2 (14.92) 19.11.2 (14.92) 11.11.2 (14.92) 11.11.2 (14.92) 12.11.2 (14.92) 13.11.2 (14.92) 14.92 (14.92) 15.11.2 (14.92) 15.11.2 (14.92) 15.11.2 (14.92) 15.11.2 (14.92) 15.11.2 (14.92) 15.11.2 (14.92) </td <td>in the second second</td> <td></td>	in the second	
III. Production cost Ratooning.gasta Ratoning.gasta Mathinery Rathinery Ratonery.(1 M-D) Rodent.control (0.5 M-D x 2 times) Ratoning materials Reference Reference Ratoning materials Reference Rodenticides (Atrazine (W) Ratoning materials Reference Rodenticides (Zine phosphate Rodenticides (Zine phosphate Rodenticides (Rounded)		(8)
III. Production cost Ratooning.gasta Ratoning.gasta Mathinery Rathinery Ratonery.(1 M-D) Rodent.control (0.5 M-D x 2 times) Ratoning materials Reference Reference Ratoning materials Reference Rodenticides (Atrazine (W) Ratoning materials Reference Rodenticides (Zine phosphate Rodenticides (Zine phosphate Rodenticides (Rounded)	T) Gross return (140 ton/ha x SQ $37/ton)$	סנוכו
<pre>II) Production cost Ratooning parts Ratooning (5 m) - Field cleaning (5 m-D) 10.00 - Basic fortilizer application - Machinery production - Machinery (1 m-D) 2.00 - Earthing and split fertilizer application - Machinery (1 time) 13.42 - Labourer (1 M-D) 2.00 - Earthing (10 M-D) 2.00 - Earthin</pre>	(Rounded)	
Ratooning (1999) Ratooning (1999) Pield cleaning (5 M-D) 10.00 Pield cleaning (5 M-D) 10.00 Particle Cleaning (5 M-D) 20.00 Clearthing and split fertilizer application - Machinery (1 M-D) 2.00 Clearthing and split fertilizer application Particle Clearthing (10 M-D) 20.00 Clearthing	(nounzel)	(1)12)
Ratooning (1999) Ratooning (1999) Pield cleaning (5 M-D) 10.00 Pield cleaning (5 M-D) 10.00 Particle Cleaning (5 M-D) 20.00 Clearthing and split fertilizer application - Machinery (1 M-D) 2.00 Clearthing and split fertilizer application Particle Clearthing (10 M-D) 20.00 Clearthing	the stand of the stand	
Rationing 1533 (1997) - Root cutting by tractor 14.92 - Field cleaning (5 M-D) 10.00 - Starting and split fertilizer application - Machinery 1 1 1 1 1 2 2.00 - Labourer (1 M-D) 2.00 - Labourer (1 M-D) 20.00 - Labourer (II) (II beautiful tob b	
- Root cutting by tractor14.92- Field cleaning (5 M-D)10.00- Basic fertilizer application17.12- Labourer (1 M-D)2.00- Earthing and split fertilizer application13.42- Labourer .(1 M-D)2.00- Labourer .(1 M-D)20.00- Rodent.control (0.5 M-D x 2 times)20.00- Weeding (5 M-D x 2 times)20.00- Fertilizers : Compound (15:15:15 330 kg)79.20- Fertilizers : Compound (15:15:15 330 kg)79.20- Agro-chemicals : Herbicides (Atrazine (W)12.75- Agro-chemicals : Herbicides (Zinc phosphate3.73Interest on working capital /133.73Interest on working capital /115.61	Determine	
 Field cleaning (5 M-D) Basic fertilizer application Machinery Labourer (1 M-D) Earthing and split fertilizer application Earthing ind split fertilizer application Earthing (1 M-D) Labourer (1 M-D) Lirrigating (10 M-D) Rodent.control (0.5 M-D x 2 times) Rodent.control (0.5 M-D x 2 times) Weeding (5 M-D x 2 times) Rodent.control (0.5 M-D x 2 times) Rodent.control (15:15:15 330 kg) Farming materials Fertilizers : Compound (15:15:15 330 kg) Farming materials Scheme (200 kg) Kiscellaneous Rodenticides (Zinc phosphate 3 kg) Scheme (23:10) Kiscellaneous Interest on working capital /1 Kounded) 	Rabooning 133131	14.02
Basic fertilizer application17.12- Machinery2.00Earthing and split fertilizer application- Machinery (1 time)- Machinery (1 time)- Machinery (1 time)- Machinery (1 time)- Jabourer. (1 M-D)2.00- Irrigating (10 M-D)2.00- Rodent.control (0.5 M-D x 2 times)2.00- Weeding (5 M-D x 2 times)2.00- Fertilizers : Compound (15:15:15 330 kg)- Fertilizers : Compound (15:15:15 330 kg)- Agro-chemicals : Herbicides (Atrazine (W)- Agro-chemicals : Herbicides (Zinc phosphate3 kg)- Miscellaneous- Miscellaneous- Rounded)- Total- Rounded)	E Root cutting by tractor	
- Machinery17.12- Labourer (1 M-D)2.00Earthing and split fertilizer application- Machinery (1 time)13.42	- Fleid (Cleaning () M-D)	10.00
1- Labourer (1 M-D)2.00Earthing and split fertilizer application13.42- Machinery (1 time)13.42- Labourer (1 M-D)20.00- Labourer (1 M-D)20.00- Labourer (1 M-D)20.00- Rodent control (0.5 M-D x 2 times)20.00- Weeding (5 M-D x 2 times)20.00- Weeding (5 M-D x 2 times)20.00- Transportation231.00Farming materials200 kg)- Fertilizers : Compound (15:15:15 330 kg)79.20- Agro-chemicals : Herbicides (Atrazine (W)- Agro-chemicals : Herbicides (Zinc phosphate- Miscellaneous3.73Interest on working capital15.61- Total723.95(Rounded)723.95		
Earthing and split fertilizer application Machinery (1 time) Labourer. (1 M-D) Rodent. control (0.5 M-D x 2 times) Weeding (5 M-D x 2 times) Weeding (5 M-D x 2 times) Transportation Farming materials Farming materi	- Machinery	
- Machinery (1 time) 13.42		2.00
2.00 1.1.1 Irrigating (10 M-D) 20.00 2.1.1 Rodent.control (0.5 M-D x 2 times) 20.00 2.1.1 Weeding (5 M-D x 2 times) 20.00 2.1.1 Weeding (5 M-D x 2 times) 200.20 2.1.1 Transportation 231.00 Farming materials 200.20 21.00 2.1.1 Fertilizers : Compound (15:15:15 330 kg) 79.20 2.1.1 Fertilizers : Compound (15:15:15 330 kg) 79.20 2.1.1 Fertilizers : Compound (15:15:15 330 kg) 79.20 2.1.1 Irrea (200 kg) 44.00 2.1.1 Fertilizers : Compound (15:15:15 kg) 12.75 2.1.1 Fertilizers : Rodenticides (Atrazine (W) 1.5 kg) 12.75 2.1.1 Skg) 6.00 33.73 Interest on working capital 15.61 3.73 2.1.1 Total 723.95 (Rounded) (724) 723.95		
2 Irrigating (10 M-D) 20.00 Rodent.control (0.5 M-D x 2 times) 20.00 Weeding (5 M-D x 2 times) 20.00 Harvesting 200.20 Transportation 231.00 Farming materials - Fertilizers : Compound (15:15:15 330 kg) 79.20 - Fertilizers : Compound (15:15:15 330 kg) 79.20 - Agro-chemicals : Herbicides (Atrazine (W) 44.00 - Agro-chemicals : Herbicides (Atrazine (W) 1.5 kg) 12.75 : Rodenticides (Zinc phosphate 3 kg) 6.00 Miscellaneous 3 kg) 5.61 Total (Rounded) 723.95		- 13.42
Rodent.control (0.5 M-D x 2 times) 2.00 Weeding (5 M-D x 2 times) 200.00 Harvesting 200.20 Transportation 231.00 Farming materials 79.20 - Fertilizers : Compound (15:15:15 330 kg) 79.20 - Agro-chemicals : Herbicides (Atrazine (W) 44.00 - Agro-chemicals : Herbicides (Atrazine (W) 1.5 kg) 12.75 : Rodenticides (Zinc phosphate 3 kg) 6.00 Interest on working capital 15.61 723.95 (Rounded) 723.95 724		2.00
Weeding (5 M-D x 2 times) 20.00 Harvesting 200.20 Transportation 231.00 Farming materials - Fertilizers : Compound (15:15:15 330 kg) 79.20 - Fertilizers : Compound (15:15:15 330 kg) 79.20 - Agro-chemicals : Herbicides (Atrazine (W) 44.00 - Agro-chemicals : Herbicides (Atrazine (W) 1.5 kg) 12.75 : Rodenticides (Zinc phosphate 3 kg) 6.00 Miscellaneous 33.73 15.61 . Total- 723.95 (724)		· 20.00
Harvesting200.20Transportation231.00Farming materials $-$ Fertilizers : Compound (15:15:15 330 kg)79.20 \cdot Fertilizers : Compound (15:15:15 330 kg)79.20 \cdot Agro-chemicals : Herbicides (Atrazine (W)44.00 \cdot Agro-chemicals : Herbicides (Atrazine (W)1.5 kg)12.75 \cdot Rodenticides (Zinc phosphate3 kg)6.00 \cdot Miscellaneous 33.73 15.61 \cdot Total- 723.95 (Rounded)		2.00
Transportation231.00Farming materials- Fertilizers :: Compound (15:15:15 330 kg)79.20: Urea(200 kg)44.00- Agro-chemicals : Herbicides (Atrazine (W)1.5 kg)12.75: Rodenticides (Zinc phosphate 3 kg)33.73Interest on working capital $\frac{11}{1}$ 15.61. Total- (Rounded) $\frac{723.95}{(724)}$	🗤 🕾 Weeding (5 M-D x 2 times)	20.00
Farming materials - Fertilizers : Compound (15:15:15 330 kg) 79.20 : Urea (200 kg) 44.00 - Agro-chemicals : Herbicides (Atrazine (W) 1.5 kg) 12.75 : Rodenticides (Zinc phosphate 3 kg) 6.00 : Miscellaneous 3 kg) 15.61 : Total- 723.95 (Rounded)	Harvesting	200.20
- Fertilizers :: Compound (15:15:15 330 kg) 79.20 : Urea (200 kg) 44.00 - Agro-chemicals : Herbicides (Atrazine (W) : 1.5 kg) 12.75 : Rodenticides (Zinc phosphate 3 kg) 6.00 : Miscellaneous 33.73 Interest on working capital /1 15.61 : Total 723.95 (Rounded) 79.20	Transportation	231.00
- Fertilizers :: Compound (15:15:15 330 kg) 79.20 : Urea (200 kg) 44.00 - Agro-chemicals : Herbicides (Atrazine (W) : 1.5 kg) 12.75 : Rodenticides (Zinc phosphate 3 kg) 6.00 : Miscellaneous 33.73 Interest on working capital /1 15.61 : Total 723.95 (Rounded) 79.20	Farming materials	
: Urea (200 kg) 44.00 - Agro-chemicals : Herbicides (Atrazine (W) 1.5 kg) 12.75 : Rodenticides (Zinc phosphate 3 kg) 6.00 3.73 Interest on working capital /1 15.61 Total- (Rounded) 723.95 (Rounded)		79.20
- Agro-chemicals : Herbicides (Atrazine (W) 1.5 kg) 12.75 : Rodenticides (Zinc phosphate 3 kg) 6.00 : Miscellaneous 33.73 Interest on working capital /1 15.61 Total- (Rounded) 723.95 (Rounded)	: Urea (200 kg)	44.00
1.5 kg)12.75: Rodenticides (Zinc phosphate 3 kg)6.003.7333.73Interest on working capital115.6115.61	- Agro-chemicals : Herbicides (Atrazine (W)	
: Rodenticides (Zinc phosphate 3 kg) 6.00 33.73 Interest on working capital /1 15.61 Total (Rounded) 723.95 (Rounded)	(12.75
$3 \text{ kg} \qquad \qquad$	Rodenticides (Zinc phosp	
Interest on working capital $\frac{71}{1}$ 15.61 Total- (Rounded) $\frac{723.95}{(724)}$		
Interest on working capital $\frac{71}{1}$ 15.61 Total- (Rounded) $\frac{723.95}{(724)}$	Miscellaneous	33.73
Total- (Rounded) 723.95 (724)	Interest on working capital /1	
(Rounded) (724)		
(Rounded) (724)	Total-	- 723.95
II) Net return <u>588</u>		(724)
II) Net return 588		• - •
II) Net return 588		
and the second sec	III) Net return	588

.

٢

<u>/1</u>. Costs of farming materials and machinery (\$141.95) x Interest (11%) = \$15.61

≈= J~50°, FINANCIAL NET RETURN PER HECTARE FOR Table - J 13 AGRICULTURAL PRODUCTS WITH PROJECT (3) COTTON Amount 3(\$)· · · · I) Gross return (3 ton/ha x 562/ton) at the return (3 ton/ha x 562/ton) at the return (1,686) * 1. 12 . Mar 1 . 1 ۰. II) Production cost 732. go tost. 736.56 Land preparation by machinery Seeding and basic fertilizer application actionate form. . 17.12 2.00 - Machinery - Labourer (1 M-D) Reseeding and thinning (5 M-D) and the second state of the state 10.00 Earthing and split fertilizer application it is a state 13.42: " TOTA NEL - 13.42; - Machinery - Labourer (1 M-D) **** Cultivating by machinery Application of agro-chemicals by airplane(15 times)85.65 Irrigating (12 M-D) 1 14. Carl 5134.00 Harvesting (67 M-D) a the second second Transportation Other works (4 M-D) Farming materials - Seed (25 kg) - Fertilizers :: Compounds (12:24:12 210kg) 34 - 46.20 : Urea $(180 \text{kg})_{1}$ - Agro-chemicals: Herbicides $\frac{1}{2}$ 36.00 4.88 : Insecticides $\frac{1}{2}$ 210.4 36.00 12.00 Miscellaneous: 34.76 Interest on working capital /3 .s. Fund in basis 30.28 Total 760.19 (Rounded) ैंः ः (760) (Protected) III) Net return -926 14 المراجع بالمراجع بالمراجع المراجع في الم الأماني المراجع المراجعة المراجعة المراجعة المراجع المراجع المراجع ال المراجع المراجع 11 Costs of farming materials (\$473.15) x Interest (6.4%) = \$30:28 /2 Planaxin 1.5kg 13 Malathion 20%, Orthene 10kg

Table - J 13 FINANCIAL NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITH PROJECT (4) - MAIZE

15 ¹	Amount (\$)
I) Gross return (4.0 ton/ha x \$124/ton)	<u>496</u>
II) Production cost	
Land preparation by machinery Seeding and basic fertilizer application	36.56
Aluti – Machinery	17.12
- Labourer (1 M-D)	2.00
Earthing and split fertilizer application	
Machinery (1 time)	13.42
Labourer (1 M-D)	2.00
Last Cultivating by machinery	14.92
Application of agro-chemicals by airplane (3 time	
Irrigating (5 M-D)	10.00
Harvesting (5 M-D)	10.00
Shelling and drying	
- Machinery (8 hrs)	6.88
- Labourer (4 M-D)	8.00
Inner transportation by tractor	9.08
Other works (2.2 M-D)	4.40
Farming materials	
- Seed: (16 ² kg)	7.04
- Fertilizers : Compound (12:24:12 210 kg/ha)	46.20
: Urea (170 kg/ha)	34.00
Agro-chemicals : Herbicides (Gesaprim 1.5kg)	4.88
\sim 1 in grant : Insecticides <u>/1</u>	40.50
S. S. Miscellaneous	14.21
The Interest on working capital $\frac{12}{12}$	8.83
Total	307.17
(Rounded)	(307)
έξι− g− − ×,	190
III) [©] Nét _s return	<u>189</u>
and the many and the product of the state of	

<u>/1</u> Dipterex-3(, Furadan 10 kg. <u>/2</u> Costs of farming materials and machinery (\$238.65) x Interest (3.7%) = \$8.83

-

.

FINANCIAL NET RETURN, PER HECTARE FOR Table - J 13 AGRICULTURAL, PRODUCTS --- WITH, PROJECT (5) SORGHUM 1. 14 <u>1</u>4 1111 Amount i**(\$)** 1) Gross return (4.0 ton/ha_x \$102/ton) (2.5) (3) (11/10) II) Production cost Land preparation by machinery of the second . . - Machinery 17.12 · - Labourer (1 M-D) WE THING THE SHE TALL AND A 2.00 -Earthing and split fertilizer application and split states ۰ ۲ 13.42 - Tractor - Labourer (1 M-D) 2.00 Cultivating by machinery Application of agro-chemicals by airplane (1 time) 5.71 10.00 Irrigating (5 M-D) Harvesting (4 M-D) and the second states in the second Threshing and drying * 6196 - Machinery (6 hrs) - Labourer (2 M-D) Transportation Farming materials 2. (B) - Seed (15 kg) - Fertilizers : Compound (12:24:12:210kg) 46.20 - Agro-chemicals : Herbicides Insecticides Dipterex 4(-36.88 Miscellaneous Interest on working capital 1 and the contract (8.20) Total :<u>27</u>7.79 (Rounded) <u>කාකාරි (278)</u> III) Net return <u>130</u> . : : : 1 Costs of farming materials (\$221.67) x Interest (3.7%) = \$8.20

- J 53 - Table - J 13 FINANCIAL NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITH PROJECT (6) BEANS	
3 step - 35. 	Amount (\$)
1) Gross return (2.0 ton/ha x \$264, ton)	<u>528</u>
II) Production cost	
- 38:32 Land, preparation by machinery	36.56
Seeding and basic fertilizer application	17.12
- Machinery - Labourer (1 M-D)	2.00
$\frac{1}{1000} = \frac{1}{1000} = \frac{1}{1000}$ Resceding (2 M-D).	4.00
Level Application of agro-chemicals by sprayer	1.UU
Hacking (19.2 hrs)	25.34
\sim Labourer (2.4 M-D)	4.80
Cultivating by machinery	14.92
i Irrigating (5 M-D)	10.00
Harvesting (10 M-D)	20.00
Threshing and drying	
(Has Si- Machinery (5 hrs)	5.80
L_{1} = Labourer (2.2 M-D)	4.40
Transportation	5.45
Conter, works (2.8 M-D)	5.60
Farming materials	
4.3.3 - Seed ((45) kg)	18.00
- Fertilizers : Compound (15:15:15 200kg)	48.00
The elements : Urea (40kg)	8.00
Malathion 2()	7.00
Miscellaneous [*]	11.85
\sim Interest on working capital $\frac{1}{2}$	6.50
Total:	255.34
(Rounded)	<u>255.34</u> (255)
(nounded)	• • • • •
111) <u>Net</u> return	<u>273</u>
and he have here we are a set of the set of	

. *

. م ع ب ^{ال}يور مالا Costs of farming materials (\$180.74) x Interest (3.7%) = \$6.69

.....

.

FINANCIAL NET, RETURN, PER HECTARE FOR Table - J 13 AGRICULTURAL PRODUCTS - WITH PROJECT (7) SESAME-Amoûn 1) Gross return (1.5 ton/ha x \$330/ton) - 2.1 anis 22 200 495:00 法法公司 经财产保险资产 人名德 II) Production cost Land preparation by machinery at address of the 3983936:56 Seeding and basic fertilizer application a starte 17:12 - Machinery a contraction to the state of the 2:00 - Labourer Earthing and split fertilizer application grantee Te - Machinery and a second state of the second s 32.00 · - Labourer (1 M-D) 14**:92** Cultivating by machinery Application of agro-chemicals by airplane (2 times) 11:42 14.00 States 14.00 Irrigating (7 M-D) Harvesting (2 M-D) Threshing and drying (2 M-D) and the second of 4.00 an 4 de die a [6.81] Transportation Other works (thinning, etc. 2 M-D) Farming materials . 转 26 - 1.20 - Seed (3 kg) Compound (12:24:12:80 kg) 23 (17:60 - Fertilizer: : Urea 🔄 🔬 🚲 (70, kg) 🕁 🚑 🖓 14:00 s :: Herbicides (herban)2kg) _____17:00 ____Insecticides (Dipterex 1()) ____8.75 - Agro-chemicals : Herbicides (herban 2kg) -Miscellaneous Interest on working capital <u>/1 and the second seco</u> Case: 205.24 Total たいたちょうがき (205) (Rounded) n ਸ≓ - ਦਾ <u>17-290</u> [ਨੂੰ III) Net return وتيه مسمعه ومه حرور الشرج والاستراد ÷ /1 Costs of farming materials (\$152.19) a start of x Interest (4.6%) = \$7.00

e J 13 FINANCIAL NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITH PROJECT	
(8) RICE (WET SEASON)	
and and a second	
աստեղանիները իրդրություն տարածումեր, երենցցումները, ոչ չույլ, 	
enter a la construcción de la const	Amount
n de niem de la companye de la compa La companye de la comp	(\$)
\mathbf{I} Change motions (E. 0. ten (her or 0.197 store)	~~~
I) Gross return (5.0 ton/ha x \$187/ton)	<u>935</u>
II) Production cost	
Land, preparation by machinery	36.56
Seeding and basic fertilizer application	
– Machinery	17.12
	2.00
Split fertilizer application (1.5 M-D) Application of agro-chemicals by airplane (3 Weeding (5 M-D)	3.00
Wooding (5 N D)	10.00
Trrigating (2.8 M-D)	5.60
Hervesting by combine	
- Combine (2.5 hrs) - Assistant operator (2.5 hrs)	54.95
Transportation	1.25 18.50
Other works (1 M-D)	2.00
Farming materials	
	27.30
	46.20 34.00
- Agro-chemicals : Herbicides $\frac{1}{1}$	61.53
· 103000101000	14.00
: Fungicides <u>/2</u>	33.00
Miscellaneous Interest on working capital <u>/4</u>	19.21
· · • 4. £	15.72
Total	419.07
(Rounded)	(419)
1) Net return	<u>516</u>
	<u></u>
$ \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \end{array} \end{array} \\ \end{array} \end{array} \\ \end{array} $	
<u>71</u> Propanil 20(, 2-4D 3(
Malathion 4(-++	
<u>/3</u> Kasumin 20kg <u>/4</u> Costs of farming materials (\$341.29)	

56 -FINANCIAL NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITH PROJECT Table - J 13 AGRICULTURAL PRODUCTS - WITH PROJECT (9) RICE (DRY SEASON) المينية الموجوعية (المالية مستلك موجوع والميني المالية المولية المراجع من المراجع المعالية المراجع المراجع الم المراجع 'Amount' 🥧 Amoun c - (\$) Gross return (5.0 ton/ha x \$187/ten) 1) <u>،</u> ۲. ್ ಸಂಗ್ರೆ ಬಗಗ ಸುಮಾರ್ಶನ್ ನಗತಿಗೆ (II) Production cost Land preparation by machinery_______36.56 Land preparation by machinery Seeding and basic fertilizer application - Machinery - Labourer (1 M-L) Split fertilizer application (1.5 M-D) Application of agro-chemicals by airplane(3 times) Weeding (5 M-D) Irrigating (4 M-D) Hereosting by combine Irrigating (4 M-D) rvesting by combine - Combine (2.5 hrs) - Assistant operator, (2.5 hrs) ransportation Harvesting by combine - Combine (2.5 hrs) ີ້ 5ຸ4**໌**.95 <u>,</u> 1.25 18.50 Transportation 2.00 Other works (1 M-D) Farming materials 46.20 - Agro-chemicals: Herbicides(Propanil 20?) : Insecticides(Malathion 4?) : Fungicides (Kasumin 20kg) : terest on portion Miscellaneous Interest on working capital /115.72 حري و ا 421.59 Total: 1.3.1.5 (422) (Rounded) III) Net return Costs of farming materials = (\$341.29) x Interest (4.6 %) = \$15.72 <u>/1</u> A LE PARTE A BUT EN DEPARTE A REALEST AND A CONTRACT

and a first second s Second second		
1e - J 13 FINANCIAL NET RETURN PER HECTARE FOR		
AGRICULTURAL PRODUCTS - WITH PROJECT		
(10) MELON		
And the second se Second second seco second second sec		
		······
A BAN AND A		Amount
- 「「「「「」」」」 「「」」」 「」」 「」」		(\$)
n na hanna an tha ann a Tha ann an tha ann an t		
I), Gross return (6.5 x \$208)		1,352.00
II) Production cost		2/ 5/
Land, higher of on by machinery		36.56
Bed preparation and seeding		13.42
And Anthers An		8.00
MALLA Split_fertilizer_application (2 M-D)		4.00
Weeding (20 M-D).		40.00
Application of agro-chemicals by sprayer(3	times)	
- Machinery (sprayer)		3.96
$t_{HJ} = Labourer (4.5 M-D)$		9.00
(20 M-D)		40.00
Irrigating (6 M-D)		12.00 20.00
Rearrangement of fruits (10 M-D)		40.00
Other works (2.4 M-D)		4.80
Farming materials		
- Seed: $(1.5 kg)$		20.93
- Fertilizers: Compound (15:15:15, 350kg	g) 🦁	127.20
: Urea (230kg)		46.00
- Agro-chemicals: Insecticides <u>/1</u>		105.74 51.82
en : Fungicides <u>/2</u>		5.00
Transportation		34.05
Miscellaneous		31.12
Interest on working capital $\frac{1}{3}$		13.20
Total:		666.80
(Rounded)		(667)
· ·		
III), Net return		685
a na ang sa		
·		<u> </u>
مە بە خىي ، بە بەر بى بى بى بى بى بەر بەر بەر بەر بەر ب		
<u>/1</u> Insecticides:. Orthene 4 kg. Lannate 1 kg	g. Tomar	on 2.
Dipterex«1 kg		
/2 Fungicides .: *Dithane M-45.7 kg, Benlate		

FINANCIAL NET RETURN PER HECTARE FOR Table - J 13 AGRICULTURAL PRODUCTS - WITH PROJECT ex. . المراجع المراجع والمحاصر والمراجع المالية المراجع المراجع المراجع المراجع المراجع والمراجع والمراجع والمراجع المراجع ال Amount <u>};(\$)</u> I) Gross return (12 ton/ha x \$72/ton) . 864.00 II) Production cost Land preparation by machinery Bed preparation and seeding - Machinery - to & ex to state 36.56 1 1 1 1 - 1 5 8.00 - Labourer (4 M-D) Split fertilizer application (2 M-D) Weeding (20 M-D) Application of agro-chemicals by sprayer (3 times) 3 - Machinery (sprayer) - Labourer (4.5 M-D) Watch (20 M-D) 20.00 Watch (20 M-D)** 12.00 Irrigating (6 M-D) Rearrangement of fruits (10 M-D) · 20.00 Harvesting (20 M-D) 4.80 Other works (2.4 M-D) Farming materials arming materials - Seed (1.5 kg) - Fertilizers: Compound(15:15:15, 300 kg) : Urea (120 kg) - Agro-chemicals: Insecticides/1 : Fungicides/2 - Pail 50.10 30.50 5.00 36.56 36.55 21:14 Transportation cost -Miscellaneous Miscellaneous Interest on working capital $\frac{1}{3}$ 7.20 <u>• 451</u> 18 Total: (451) (Rounded) III) Net return <u>/1</u> Insecticides : Orthene 4 kg <u>/2</u> Fungicides : Dithane M-45.7-kg, Duconil 1.0 kg - · · · · · · · · · <u>/3</u> Costs of farming material (\$194.54) x Interest (3.7 %) = \$14.49 1.

- J 59 -Table - J 13 FINANCIAL NET RETURN PER HECTARE FOR AGRICULTURAL PRODUCTS - WITH PROJECT (12) VEGETABLES (TOMATOES)

T). Gross return (20 ton/ha x \$107/ton) Amount (\$) 2,140.00 A CONTRACTOR AND A CONT II) Production cost Land preparation by machinery Growing of seedings (10 M-D) 36.56 20.00 Field operation for transplanting Machinery 13.42 Labourer (4 M-D) 8.00 Transplanting (40 M-D) Weeding (20 M-D) 80.00 40.00 *****9 Split fertilizer application (2 M-D) 4.00 . -- Irrigating (6 M-D) 12.00 Application of agro-chemicals by sprayer (5 times) - Machinery 6.60 - Labourer (10 M-D) 20.00 Cullivating by machinery (2 times) 29.84 ŝ Harvesting (90 M-D) 180.00 Inner transportation 68.10 Other works 20.00 Farming materials - Seed (lkg) 10.00 - Fertilizers : (Compound 15:15:15 530kg) 173.20 : (Urea 230kg) 324.60 - Agro-chemicals/1 - Baskets 50.00 Miscellaneous 54.82 Interest on working capital $\frac{1}{2}$ 21.79 _____ Total 1,172.93 (Round) (1, 173)-Ξ. 3. III) Net return <u>972</u>

/1. Fungicides : Dithane M-45, Caprantol 40kg

Insecticides: Dipterex 16kg, Malathion 16kg, Tomaron 4(

10.113 (\$588.8) x Interest (3.7%) = \$21.79

ANNEX K RESULTS OF GEOLOGICAL DRILLING AND PRESSURE TEST

LIST OF GEOROGICAL RECORD OF BORING

.

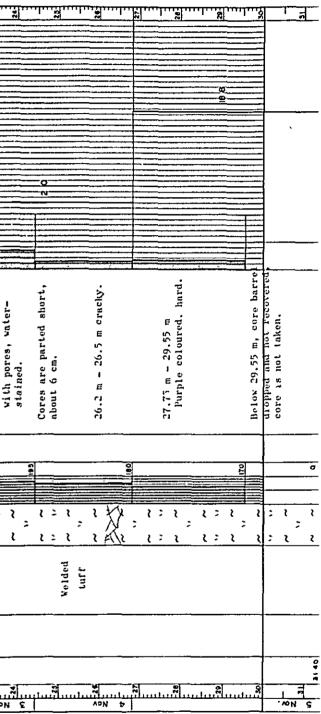
•

													rage
HOLE	No.	SF-1	• • • •	• • • • •			• • • •	• • • •		••••	• • • • • • •		Kl
HOLE	No.	SF-2	(1)	• • • •		• • • •	• • • •			••••	• • • • • • •	•••••	K2
HOLE	No.	SF-2	(2)	• • • •		• • • •	• • • •			••••	• • • • • • •		К3
HOLE	No.	SF-3	(1)	• • • •		• • • •	• • •			• • • • • •	• • • • • • •		K4
HOLE	No.	SF-3	(2)	• • • •		• • • •	•••			••••	• • • • • • •		K5
HOLE	No.	MI-1					• • •				• • • • • • •		K6
HOLE	No.	MI-2	(1)			• • • •	• • • •				• • • • • • •		K7
HOLE	No.	MI-2	(2)				• • • •		••••	• • • • • •			к8
HOLE	No.	MI-3	• • •						• • • • •	••••			K9
HOLE	No.	MII-	l	• • • • •	• • • • •						•••••		к10
HOLE	No.	B-1	• • • •	• • • • •			• • • •				• • • • • • •	• • • • • • •	K11
HOLE	No.	P-1	• • • •				• • • •						K12

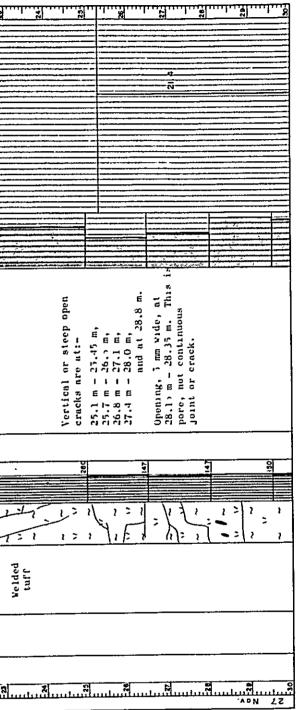
~

Page

	HIA	: E					<u>1</u>			<u> </u>	<u>.</u>	<u></u>	<u></u>	<u>s</u> hundari		Burnetter	<u>•</u>]i.		±	<u>, 15</u>		1		N
AL 1977	est	30																						
V.	Vater pressure test Lureon unit	20 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -																						
	ler pressure Luceon unit																							
OF HOLE	Fat																							
ATTON ING	 		1																	r				
UN FERMANDO INCLINATIO OF DRILLING	<u>п.0.</u> п	8																						
TE OF				pumice. Le cracks	•		pun	*							· ·		ble.	A //-			,	:	é	<u> </u>
31.4 H	N	- I			22 2 2 2 2 2	- v - v	d around	d at							ed at	÷	m friable		od at	friabl		friable	25 m purple. massive.	
HOLE 7	DESCRIPTION		l'e tuff.		5		, weathered	Slightly weathered at							veathered	. 21.95 m tely hard	17.05 #		veathered	19.65 m		21.95 m	- 22.25 r hard, mai	– 23.45 m – 25.30 m pores, vater ed.
AC Ace	DESC		aci	· -	3 411 113	, , ,	tly ve	tly we	•						tly ve B.	15	I E		tly ve	е е		н 1 1	d, har	22.55 m - 23.45 24.40 m - 25.36 with pores, v stained.
DEPTH OF HOLE C Acker, Ace "W" BY SYNAC			khi te	Sparsely Maggivo,			Slightly 4.9 m.	sligh	E 						Slightly 14.6 m.	14.6 m moder	16.75		Slightly	19.2		21.5	21.95 m Velded,	22.55 24.40 wit
ED	8 8373	BIAM	1	cone MC : 75m/u		• •	D.C	· ·					<u></u>									,I.,		<u> </u>
835 m MACH	CORE RECOVERY	ВD. Х			, .		0		£1	*					011							A N		
R C E	2 -	SECTION	-;= }	;	1 1	· 2	1. P	· • • • •	<u>1</u> 1022 ℓ 1022 ℓ		- 1: ; ;	2	1 1 2	ι ι: ;	:		·	1:1	1 :		: {	N	÷ ? ;	;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
SURFACE 75 mm	4		<u> </u>	<u> </u>	<u> </u>	<u>- ((</u>	<u>; </u>			1:1	1:	<u> </u>	1 17	<u> </u>	: L	1 2 1	1.11	1:1		<u> </u>	. ? 1		: ?	1 = 1
			ᆀ .	1. **	- -	· · · ·		Wolded	tuff															
ELEVATION OF GROUND S DIAMETER OF HOLE CORE RECOVERY	va vv	1		·				- *	<u></u>	-,		<u></u>					<u></u>					-+		<u> </u>
E REC	ELEVA.	(m)	<u>.</u>		• •		<u> </u>	<u></u>																
ELEVATIO DIAMETE CORE	DEPTH			~ ~		·		•	-		<u>-</u>		<u></u>	<u>a</u>	•1							 		-AON E



			- 4 - <u>-</u>										
	7791 .:		Test Pressure Test w				· · · · · · · · · · · · · · · · · · ·	2					
VERTICAL	- 8 Dec.	IIOKA	ssure n uni						obtain holtain holtai				
SAN FERNANDO DAMSITE, LEFT BANK	Nov.	NISI	er Pre					اا ا					
OF HO	1: 19 Nov 8 De	LOGGED BY S.	Nater Pressure Test	2 				1	Lt ak				
TION	ŊŊ	CCED	11_	8									
ICLINA	OF : DRILLING	Ц Ц		8									
	E OF		والمتشطيب		م مې د محمد کې چې د محمد کې		~ ~ z ¥						
61.0 m	DATE			vith .	S.S.		, , ,	-	range tain develops.	develops.	moderately hard. are generally l or steeply d. acks are open.	, 19.5 m y vater-stained i veitical crack.	-ŝtain
L		۲ ۲ ۲	ЧОЦ - I	rilled w	craci	. د م	,• 、 、	· ·		트 곳 얻	erately har generally r steeply s are open.	5 m ter-st tical	vater.
DF. HO	Ace "	ζ., τ	DESCR	idio bit.v	Di and Di and	*	,		ed with d water ks. - 13.1 al crac	- 15.5 al crac ely han	, moderately har s are generally cal or steeply ned. cracks are open.	– 19. zły wa en veř	21 m, y rare
DEPTH OF HOLE	Acker	BY SYMAC 14 by	DESCRIPTION	White, acidic. To 1'50 m; dri tricono bit vi	Weathored and cracky.			-	Wenthered with coloured water- on cracks. 8.85 m - 13.1 r Vertical crack	, 13.7 m - 1 ⁶ Vertical Moderately	White, mou Gracks ar vertical d inclined. somo cracl	19,2 m - 1 strongly on open v	Belov 21 m, vater-ŝtain Ìs very rure.
ā.	NE	ED BY	ASTER METER	MC Wh 75m/r To Tri	DC 75m/w Sc	د 			500 00		3054 6		
E	MACHINE	DRILL	ריי א <u>בא</u>	• <u>•</u> • • • • •	•		N 1	-			8	202	
12	-	_	CORE CORE						1.1.1.1.1.	Hych Lyth 1	1.47-1-11		<u>۲</u> ۰۰۲
ACE	75 mm	¥ 2	COLUMN		XX	XX			KARK IV-R			X:17: 17	<u>· ·</u>
SURFACE	12	A 1	TYPE			Velded	· · · · ·			ghtly ded f			
ONIO	OLE	Υ. Έ	: : <u>:</u> :			rej, , , Kenti, , ,	-			112 21 21 21 21 21 21 21 21 21 21 21 21			
	DIAMETER OF HOLE	COVER	ELEVA.	î					-				
NOL	ETER	RE' RE	THEL	le l		. . .	· · · · · · · · · · · · · · · · · · ·		n B B				
3 2	VN	18	DEPTH								มีเมนี่มาไหม่เสียง ^^งง		



BANK VERTJCAL 8 Dec. 1977 110Ka	DEPTH 20 30				
AMSITE, LEFT I N OF HOLE 19 Nov ED BY S. NISH	 Vater Pressure Test Vater Pressure Test Vater Pressure Test 				
DEPTH OF HOLE 61.0 m INCLINATION DATE OF DRILLING Acker Ace "V" , DATE OF DRILLING BY SYNG LOGGET	DESCRIPTION	oo 31 m; cracks are o sparse and at:- 5 m - 33.8 m; 5 m - 35.8 m. 95 m - 16.25 m.	ple, moderation en coloured, esite fragment erately hard ic cracks are ic cracks are in as in 40.4 45 m, 41.6 75 m - 41.9 21.6 m - 41.9	shtly vea	Belov 49.1 m gradually changes to grey tuff. Horizontal. compact. Grey coloured, intercalated vith thin black shales. 5 cm thick, at 50.6 m and 51.2 m. Horizontally bedding. 52.4 m - 52.7 m vertical
770 m DRILLED BY	CORE RECOVERY BIT BIT BIT SU		Model Pur		
SURFACE' C 75 mm 80.5 %	PE COLUMN			Itered Units and	y tuff
PROJECT CHOLATECA ELEVATION OF GROUND PLANETER OF HOLE CORE RECOVERY	ELEVA. TION ROCK		36.00 37.23 Silaly		44.13 So So Black

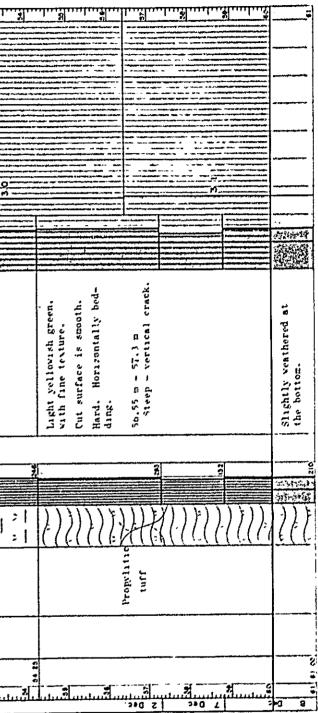
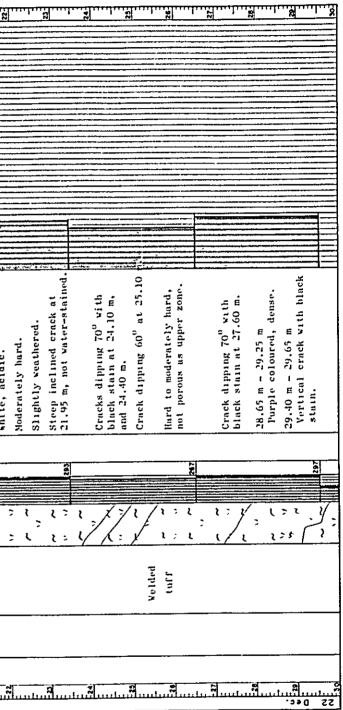


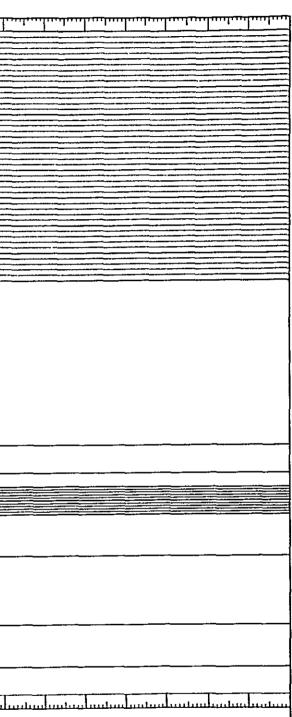
Image: control surveyer: ASY = TO CONTROL ASY = TO CONTR ASY = TO CONTROL ASY = TO CONT	LADIO DAMSITE, RIGHT BANK INATION OF HOLE VERTICAL LLING ¹ 21 Dec 28 Dec. 1977 LOGGED BY S. NISHIOKA	DELLH					
URFACE 815 m URFACE 815 m 15 mm Active 15	LOCATION SAN FERNANDO DANSI1 DEPTH OF HOLE 48.75 m INCLINATION OF Mark.111 Hill HILLING 1 Mark.111 HILL ATE OF DRILLING 1 Nark.111 HILL HILL 1 1 Nark.111 HILL HILL 1 1	DESCRIPTION	idıc. drılled vith bit vithout coring.	but mode-	 (.9 m - 8.2 m Vertically elongated vertically elongated openng with 3 mm of width, not continuous. Generally massive, with little cracks, Occasional ly water stained open pores arr encountered at pores arr encountered at pores are elongated in spacing or more. Openings are elongated in vertical or steeply inclined direction. 	Below lo.8 m, water-staın along verticul coarse gruined laminutions.	White, acidic.
CIOLITERIA IN OF GROUND SURFACE GA OF HOLE 75 mm RECOVERY 82.6 5 RECOVERY 82.6 5 Neathered ture verided	LED	NIAMETER BIT & BIT &	NC Tri-	b b b b c b c b c b c b c b c			€
	C CIOLATERA ON OF GROUND SURFACE ER OF HOLE 75 mm RECOVERY 82.6 5	ы		<u>/////////////////////////////////////</u>	<u>/ v/= k 7 v/= x / v/= x / k / v/= x / v/= y /</u>	h7 J- K/ K/ X/ K/ X/	55 FT

.

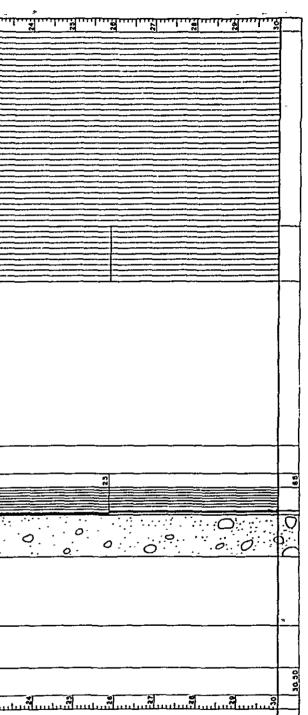


	T BANK VERTICAL	.	DELLH						······								<u></u>	,,,,, <u></u> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	····	<u></u>	<u> </u>			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
E No. SF-3 (2)	V OF HOLE																							
HOLE	AN FERNANDO I		R.Q.D.	8																				
OF BORING	DEPTH OF HOLE 48.75	Mark 111 1- DAID	DESCRIPTION			:	irregular openings, 1 mm - 1 frregular openings, 1 mm - 10 mm vide, ferrugenous stained alour steeb joint.	33.50 m - J5.95 m Weathered, yellowish.	;	35.95 m = 36.25 m Purple coloured, some venthered.		Acidic, coarse grained.	Generally yellow stained. Massive, with flow struc-	ture or lamination varying horizontal to verticul. Noderatoly hard, with	rather less density.	-	42.05 m - 46.60 m Very steep lumination. Partly vertical.	Very course quartz granules in 2 cm thick- ness at 43.3 m.			47.25 m - 47.85 m Lumination of mild inclination, continuous	from vertical in the upper zone.		
RECORD	835 a	DRILLED BY	METER &			8							ŝ			8			5		270	60	 	
CAL	1 83					1 2 4	~ ~	λ λ λ	2 P 2 2	;	2 2 2	~	; ~	· · :	2 2	; `	<u>ر</u> :	2 2 3	2 2	2 2	1 2 1	1:		
GEOLOGICAL	IRFACE	82.6 %	COLUMN	:		1 2 1	: :	2.	>	21	2 7 2	2		: ::	:	; 1	:	2	;	;	: 1	ι :	 	
GEO	121	DIAMETER OF HOLE CORE RECOVERY 8	ROCK TYPE			~ .	Velded	tuff		<u></u>	-						Velded tuff						 	
ł	N OF G	RECOVE	ELEVA. TION	Ê	-	-			-				_										 	
_	PROJECT ELEVATIO	ORE	DEPTH	Î		-	-	x			2 8 8					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~) ec.	40	 ı	

I DATE

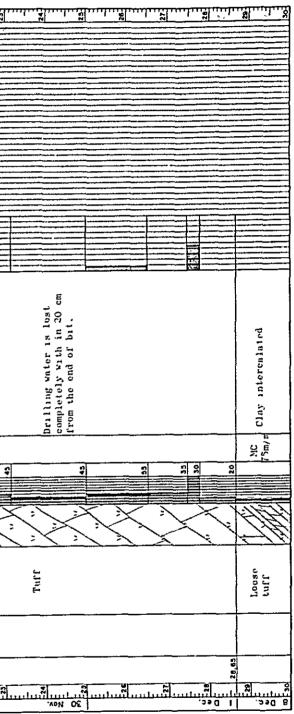


-1 IGHT BANK M.F. VERTICAL	20 Oct 28 Oct. 1977 S. Nishioka							
BORING HOLE No. MI-1 LOCATION NOROLLCA DAMSITE 1, RIGHT HOLE 30.5 - INCLINATION OF HOLE	DATE OF DRILLING	2	ed mainly of large and fragments of te, with sand.	re angular.			m, drilling (/min) leaks	
RECORD OF	MACHINE AFTER MACHINE TIT	CORE SECONERY SECONERY DESCUE	Compos blacks rhyoli	Components ar Blocks are 1 diameter.		8	Below 19.8 m, water (100 (//	23
SEOLOGICA	. 17.5 % ···	TYPE SECTION		Mud Flow deposit.	2078804		0 0 0	
PROJECT EI EVATIO	DIAMET	DATE DEPTH					, 	



- K6 -

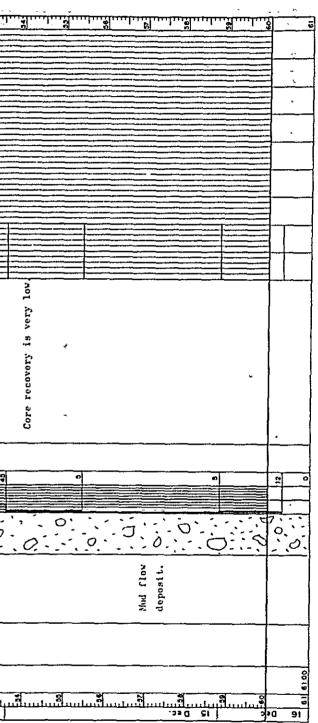
HT BANK	01- 1044 VERTICAL	BY S. NI shi oka	الموادية من الموادية ا		
N NOROLICA DANSITE I, RIGHT BANK	21	ell's	50 000		
	DEPTH OF HOLE	BY STRAC	DESCRIPTION IS SAME	Drilling vator is lost of bit.	Recovering cores are brown coloured tuff. Jlurd, loosenod with many cracks.
	267 m	Const of at all	BIT A		30 60 13 0 13 31 0 0 13 32 60 13 0 0 13 33 0 0 13 30 0 0 0 13 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
<u> </u>	10 SURFACE	S V	TYPE SECTION	I S S S S S S S S S S S S S S S S S S S	
Clioutineco	ELEVATION OF GROUND	RECOVERY	ELEVA- TION ROCK 7		
PROJECT (2	LEVATIO	CORE R	DEPTH (a)		8 = =



- K7 -

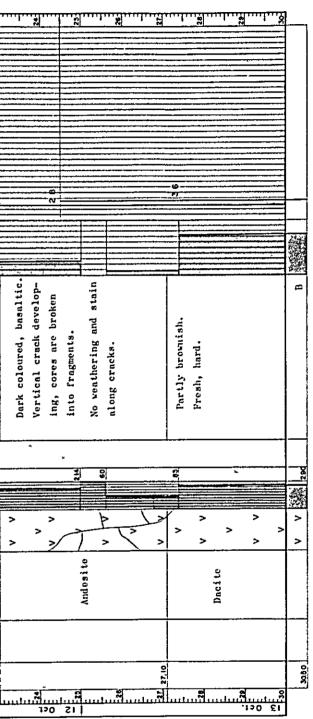
			DELLH		<u>ສາມັນກາງການເປັນສາມານຫຼັງການການສູ່ມີມີ</u>	<u> </u>	<u>מַּיִּוֹשִׁיּהַן אַיּהַוּהַיּוֹבָּ</u> אוּוּיוּהוּאַרייובָּייוּהוּיוּבָּ
113	VERTICAL	Nishioka					
<u></u>							
CA DAMSITE	71 T	OCCED	R.Q.D.				
2	e Hel				dir rock		2 2 2
LOCATION	HOLE (61 H11 krk 111		DESCRIPTION	Ore cove	the state of the s	• • •	lite cores
	DEPTH OI	BY SYMAC	ä	Very lovicon	Fragments, small regments, small lem, are recov in lose deposi	t 74	Short rhyoli
<u>, </u>			Can 3	E S N N N			
	-		NN RECOVERY	H H H	0.000		
MARCH ALL TH	75 mm	21, 8, 4	rype section				
LUTECA :	.		ROCK TYPE	Loose tuff		Rock Г пдтеп	
r CNO	DIAMETER OF HOLE	KECUVE	ELEVA Tron				
PROJECT	DIAMET		DEPTH				
		Ŀ	JTAG:			12 Dec	t Dec.





JUTTER: JUTORNOM JUTORNOM JUTORNOM JUTORNOM JUTORNOM JUTORNOM	1. RIVER BED OF HOLE VERTICAL 20 Dec 29 Dec. 1977 BY S. Nishioka					
	N NOROLICA DANSITE 30.5 m INCLINATION DATE OF DRILLING	R.Q.D.			30 m friable. agmental. 10 m cracky. 80 m core h, h, ter.	ompact.
SURFACE SURFACE 55 mm 17 PE 60.0, % 60.0, % 17 V 17 V 17 V 17 V 17 V 17 V 17 V 17 V	DEPTH Neker Billy	BIT . &	NG N		17.65 m - 1 200 is 18.30 m - 2 19.50 m - 1 19.50 m - 1 broken:	 bark brown, c
		TYPE SECTION	Sand and Bravels	- Jını		stono

1-11	ROLICA DAMSITE-II, RIVER BED INCLINATION OF HOLE VERTICAL	Oct. S., Ni	La Vater pressure test is the Fr			
	DEPTH OF HOLE JO.5 m	MACHINE NIJJY, MARK III DATE OF DRULLING 7 7	IT SCHERE	River deposit. Containing boulders, up to 1 m in diameter, of daci te, rhyoli te and velded tuff.	DC Dark coloured basaltic, 75 with small pores with allicate occasionally. Fresh, hard, with cracks at interval of 10 - 30 cm. 14.0 m - 14.6 m cracky. 15.1 m - 17.6 m with 11ttle cracks.	Brownish, solid. Fresh, hard. Dark coloured.
	VRFACE		PE SECTION RECO		Andesito	202 20,00

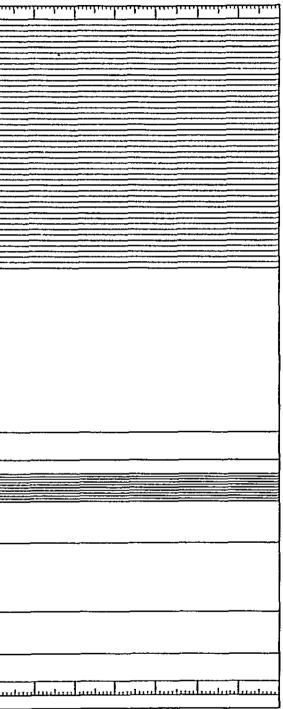


- K10 -

×

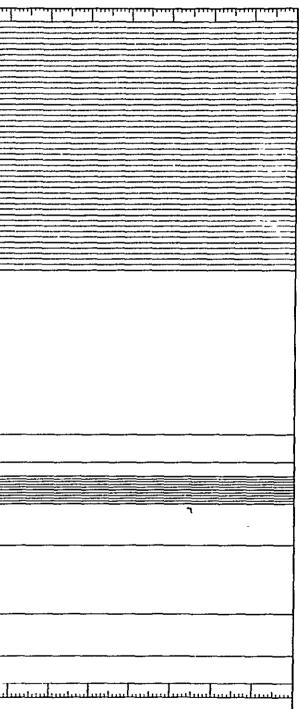
	- / // 3					
LAS BASAS VEIR SITE	OF DRULLING					
1 1	49 m DEFIH OF HOLE 16.8 m MACHINE ACKUP: HITL MACHINE ACKUP: HITL MACHINE ACKUP: HITL MACHINE ACKUP: ACKUP MACHINE ACKUP: ACKUP MACHINE ACKUP	DESCRIPTION	Niver deposit. Niver deposit. Containing round gravels. 1 - 7, cm in dinmeter, of andesite, ducite and rhyolite.	· · · · · · · · · · · · · · · · · · ·	Partly lapilli tuff with small rock fragments. Massive and moderately hard. Purple coloured to 15.5 m. grey below 15.5 m.	
GA D. ETIDEACE	MACHINE		E SZ		051 - 051	
TUPEACE	0KFACE 75 mm	PE COLUMN	in md		4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
CHOLUTECA	DIAMETER OF HOLE	ELEVA FILON ROCK T	Sand	- - -	Juff breed	
PROJECT	DIAMETE					

•



EL PAJAON VEIR STI 5.5 m INCLINATION OF DATE OF DRULLING In R. Q.D. C. C. C. C. C. C. C. C. C. C	SITE OF HOLE VFRTICAL 19 Sep 21 Sep. 1377 BY S. Nishioka	DEBTH		
URFACE 21.5 m DEPTH 75 mm MACHINE AGRILED BY STN 71.7 % DRULLED BY STN 31.7 % DRULLED BY STN 11.7 % COLUNN SECONENT PE COLUNN SECONENT PE SECON SECONENT PE SECONENT PE<	N EL PAPALON VEIR SIT 15.5 m INCLINATION OF DATE OF DRILLING I	R.Q.D.	osit. re 3-15 cm i of andesite subround.	very vith CL
	21.5 m	CORE & CORE & BECOVERY & BIT &	MC Rivor de MC Rivor de Gravels diameter diameter 20 Round to 120 120	Dark Dark crack Crack
	CHOLUTECA ON OF GROUND SURFAC ER OF HOLE 75 mm RECOVERY 31.7 9	9 J.	Sand and gravels	Andesi te V V V





ANNEX L

INDICATIVE PLAN OF MOROLICA DAM IRPIGATION AND POWER DEVELOPMENT PROJECT

L INDICATION PLAN OF MOROLICA DAM IRRIGATION AND POWER DEVELOPMENT

TABLE OF CONTENTS

.

PLAN FORMULATION	Ll
Ll.l General	Ll
Ll.2 Plan Formulation	L2
BASIC DESIGN OF MOROLICA	
MULTIPURPOSE DAM SCHEME	L5
L2.1 Main Dam	L5
L2.2 Diversions during Construction	L6
L2.3 Spillway	L6
L2.4 Outlet Works	L7
L2.5 Power Facilities	L7
L2.5.1 1ntake	L7
L2.5.2 Penstock	L8
L2.5.3 Powerhouse	L8
L2.5.4 Transmission Line and Receiving Substation	on L9
L2.6 Access and Preparatory Works	L9
COST ESTIMATE	L10
L3.1 Construction Cost	L10
L3.2 Operation, Maintenance and Replacement Cost	L10
L3.3 Investment Disbursement Schedule	L11
L3.4 Cost Stream	L11
PRELIMINARY ECONOMIC ANALYSIS	L12
IA.1 Benefit	L12
14.2 Economic Analysis	L12
CONCLUSIONS	L13
	L1.1 General L1.2 Plan Formulation BASIC DESIGN OF MOROLICA MULTIPURPOSE DAM SCHEME L2.1 Main Dam L2.2 Diversions during Construction L2.3 Spillway L2.4 Outlet Works L2.5 Power Facilities L2.5.1 Intake L2.5.2 Penstock L2.5.3 Powerhouse L2.5.4 Transmission Line and Receiving Substation L2.6 Access and Preparatory Works COST ESTIMATE L3.1 Construction Cost L3.2 Operation, Maintenance and Replacement Cost L3.3 Investment Disbursement Schedule L3.4 Cost Stream PRELIMINARY ECONOMIC ANALYSIS L4.1 Benefit L4.2 Economic Analysis

	Page
	لى مەكىرىتى ئىرىنى بىر تىرىپى بىرىكى بىرىكى بىرىكى ئىلى بىرىپىدىنى بىرىپىدى. ئىرىكى يېچىكى بىرىپىيىنى بىرىپى
L1	MOROLICA MULTIPURPOSE DAM PLAN ALTERNATIVE STUDY
	میرین میلان میلان این این این از دور این این است. به می این آن آن آن این این این این این این این این این ای
L2	COST ESTIMATE
0-	MOROLICA MULTIPURPOSE DAM PROJECT
	ان میں میں اور
L3	INVESTMENT DISBURSEMENT SCHEDULE
	الا المن الأولى الله في المحمد المحمد الله المحمد الله التي تعالي في المحمد المحمد المحمد المحمد المحمد المحمد والا محمد المحمد الم المحمد المحمد
L4	COST AND BENEFIT STREAM
~ '	
L5	PRESENT VALUES OF COST AND BENEFIT
L6	COST ALLOCATION
10	
	LIST OF FIGURES
	میں ہے۔ اس کی جی کی ایک کی جامع ہونے کی تو کی کی جامع ہوتے ہے۔ اس کی جی کی ایک کی ایک کی جامع ہونے کی تو کی کی کی جامع ہوتے ہے۔
	Page
_	
Ll	MOROLICA DAM
	GENERAL LAYOUT OF HIGH DAM PLAN
	الم المراجع معنية المراجع من المراجع والمراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع
L2	MOROLICA'DAM
	SECTIONS OF HIGH DAM
L3 ¹	MOROLICA DAM
	WATERWAY AND POWER HOUSE
L	
IA	BENEFIT-COST CURVES
	MOROLICA MULTIPURPOSE PLAN

L1. PLAN FORMULATION Take WE WALLAS THE ALL REAL

.

Ll.1 General

, **"**

In the formulation of the Agricultural Development Project of othe Choluteca, Basin, the San Fernando dam and reservoir scheme is m. proposed, as discussed in ANNEX G, mainly because the estimated cost is less in the scheme than the Morolica alternative scheme.

- S- L-1 -

•

It is true that the Morolica scheme will be inferior to the San Fernando scheme as far as the scheme is formulated for irrigation as the main purpose. However, the Morolica scheme will have much more 111221 12 power potential than the San Fernando scheme as the annual average discharge volume at the Morolica site is almost three times as large as the discharge volume at the San Fernando damsite.

When the Morolica scheme is formulated for power generation and irrigation water supply as a multiple purpose scheme, the approach used in planning irrigation purpose scheme is no longer effective, and a completely different approach will be necessary for a multipurpose 'dam'project.

1. 1.

In the plan formulation of the dam and reservoir scheme for the present Choluteca Project, a dam and reservoir scheme for only irrigation a: purpose is first planned, and then the additional cost and power benefit is studied to attain maximum net benefit on introducing power installation. In this case power installation is limited in minor importance because the Project should be formulated for irrigation as the main purpose and scheduled to be implemented under the control and administration of the Ministry.of Natural Resources. Therefore, a power benefit is evaluated conservatively enough to draw an attention of the Power Authority of Honduras, i.e., ENEE, allowing an internal rate of return of 14% to the power portion. ۰. - ----• •

· * . -In case of planning a multipurpose dam scheme, however, power generation is of prime, importance as well as irrigation water, supply. .t.e. Irrigation water requirement is great and urgent in the Choluteca. basin, but need of power depends on the implementation schedule of

the El Cajon Hydropower Project, which is a large scale power development scheme with an installed capacity of 282,000 kW and is scheduled to start its operation in 1983.

If the El-Cajon Project is implemented as scheduled, need of another power source is not urgent and consequently the San Pernando dam and reservoir scheme is recommendable to meet an urgent irrigation water requirement. However; if the El-Cajon Project is going behind schedule by a few years and if ENEE is obliged to seek another power source urgently, the Morolica multipurpose dam plan can be one of the most attractive alternatives. It is to be noted that the Morolica multipurpose plan is always dependent on the existence of an urgent need of power.

L1.2 Plan Formulation

The basic consideration and assumptions are as follows?"

See - marked to the term to the second second

5.7%

- (i) The upstream and downtream water requirement for irrigation is considered to be the same as in the Agricultural Development. Project of the Choluteca Basin, permitting to irrigate 1,660 ha in the upstream area and 17,370 ha in the downstream area of the Morolica dam.
- (ii) The optimum utilization of water resources for power generation is to be achieved.
- (iii) The power station is assumed to be operated as a peaking power station securing a daily minimum operation of 5 hours.
- (iv) A multipurpose dam scheme is to be formulated for power and irrigation. Other functions such as flood control, city water supply; etc. are not taken into account at the moment. The functions other than power and irrigation will be considered if required at later stages of the project.

With reference to the Morolica'scheme studied for the Choluteca project shown in Table-G4, the alternative study is made, and the result is shown in Table-L1: In the preparation of Table-L1, the following

≰ -∫L 2 - ·

Clause tornth are proposed at the et of an

assumptions are made. We set with 76 meters in height (i) The dam cost for only irrigation purpose with 76 meters in height Mand 3 million cubic meters in volume is estimated to be US\$34,710,000,

as shown in Table-G3. A x-meter-high dam cost is assumed to be

 $\frac{1}{C_{dam}} = 34,710,000 + 7.0 \times 3,000,000 \times \left\{ \left(\frac{X}{76}\right)^{2.5} - 1 \right\}$

- - (iii) Irrigation facilities cost is based on the cost estimate made for the Agricultural Development Project of the Choluteca Basin.
 - (iv) Engineering cost and general expense is estimated to be 15% of the direct cost. Also physical contingency of 10% is considered. to be an overall cost increase of 26.5%.
 - (v) Construction period of 4 years is assumed and the interest during construction at the 8% interest rate is calculated to be 10.9% of the total cost.
 - (vi) Operation and maintenance cost of dam and power station and also irrigation facilities are reduced from the annual power and irrigation benefit. The annual net benefit is capitalized by the discount rate of 8%.

Table-Ll indicates that the Benefit-Cost Ratios are almost equalin three alternative plans. If the maximum rate of return to the investment is desired, the alternative No. 1 will be the best one. On the other hand, if the maximum utilization of water resources is more desirous, the alternative No. 3 will be selected as the best alternative. The alternative No. 2 shown in Table-Ll is taken up for further study because this alternative is considered to be close to the optimum scale of development.

The result of resevoir operation study for the proposed alternatives is shown in the computer output form in ANNEX G. The proposed alternatives

MULTIPURPOSE DAM SCHEME -ซิคโรโฉลี แต่ได้ผู้คิดผิดป่ารู้นี่ ขอผ้างตัญบ่ารถ และเป็นและ 11 - การสา · · · · · ·

¹ 2₂ , ¹ 3−≈ μ².5 .4 .

14 L2 1 Main Dam . - 1² The general layout of a dam, spillway, power station and other related structures are shown in Fig.-L1, and typical sections of each structure are shown in Fig.-L2 and Fig.-L3.

1.51

Hydrology and geology at the damsite are described in detail in ANNEX A. and ANNEX C, respectively. i a

Because of a scarcity of impervious clay material, a rockfill dam with asphalt facing is proposed. Rock material is abundant from andesite near the damsite and also from spillway excavation located on the right bank of the river. The upstream and downstream slopes of the dam are tentativelly determined to be 1:1.8 and 1:2.0. respectively. The up-Employ State (11) ALL S. L. L. S. stream slope is covered with asphalt facing.

The dam crest is, at El. 243.0 m and dam height will be approximately .93.0 meters above the riverbed. The dam will have a crest length of 500 meters and contain about 5 million cubic meters of rock embankment. The dam crest is 6.0 meters above the normal high water level of El. 237.0 m, and 1.5 meters above maximum flood water level of El. 241.5 m when the probable maximum flood comes. - Marger generate

A concrete inspection gallery will be provided at the bottom of asphalt facing. connecting tightly the asphalt facing with foundation an bedrock. The river deposit is considered to be about 10 meters in thickness above the bed rock and the firm rock is assumed to appear by the excavation of 10 meters in thickness on both abutment at the and amsite. These river deposit material and weathered rocks on the abutment will be removed from the gallery foundation. For the rock embankment foundation of the dam, only organic and earth materials 4-36-4 will be removed. After preparing the foundation for rock embankment. a blanket grouting will be made and a curtain grouting will be provided

at the upstream rim of the dam from the inspection gallery.

L2.2 Diversions during Construction

Diversion works will consist of upstream and downstream cofferdams and a circular sectioned diversion tunnel in the left bank of the river. The upstream cofferdam with crest at El.177.0 m, will divert the river flow through the tunnel and permit construction of the main dam throughout its construction period. With upstream water surface at El. 176.10 m, a discharge of 1.286 m³/s will be diverted through the diversion tunnel of 11.0 meters in diameter and of 615 meters in length. This diversion capacity is equivalent to the 10-year probable flood estimated at this site.

The downstream cofferdam with a crest at EL: 160 m will be in-

The diversion tunnel will be concrete lined with 60 cm in average thickness. The concrete inlet structure is designed to be bulkheaded at the time of tunnel plug. A 40-meter-long tunnel plug is made for closure at the upstream side of the tunnel. After the tunnel plug, the downstream side of the tunnel will be utilized as a waterway for power generation and outlet works in the concept of the tunnel will be utilized as a waterway for

L2.3 Spillway

A spillway is located on the right bank of the river. The spillway will consist of a gated crest. two piers, spillway bridge. spillway chute with two training walls on both sides of the chute and a flip bucket at the downstream end of the chute. A spillway forebay will be excavated to El. 221.5 m to lead water smoothly to the spillway. Water through the spillway will be jumped at the flip bucket and fall down in the existing river channel after losing its energy. No-plunge pool excavation is considered.

The spillway crest is at El. 225.0 m and will have a gross width of 42.0 meters including the two pier width of 6.0 meters. Three numbers of 12 -meter-wide and 13 -meter-high radial gates will be installed with a stoplog structure. A spillway bridge will be provided over the spillway crest as a roadway. The spillway is designed to pass the maximum probable flood safely. The inflow flood peak of 6,390 m³/s

- L 6 - **

し いっきむぶ みこみ 出身ちがかち ふたくなませる

2 m go and the the start of the

- 67.2 -

will be reduced on reservoir routing to a maximum spillway discharge of 4,895 m³/s, assuming the flood comes when the water level in the reservoir, is at the normal high water level of El. 237.0 m. In this case the reservoir water level will rise to a maximum flood level of El. 241.5 m.

The spillway chute is 150 meters in length and designed to reduce gradually in its width and the downstream end where the flip bucket is provided has the width of 36.0 meters.

L2.4 Outlet Works

the fast Coutlet works will be incorporated in the powerhouse. The power . how intaked shaft will be constructed above the diversion tunnel and the - 104 portion of the diversion tunnel is used as a waterway. The 6.0 -*meter-diameter penstock is branched off from the diversion tunnel and serve both for power generation and for outlet works. The mian penstock will bifurcate into 3.0 - meter-diameter branches. A 1.0 --meter-diameter outlet pipe will branch off from one of the branch penstock upstream from the turbine inlet valve, and end in the outlet chamber on the downstream side of the powerhouse, discharging through a 0.8 - meter-diameter Howell-Bunger type valve. The Howell-Bunger valve will dissipate energy in the concrete outlet chamber. A 1.0 meter-diameter Butterfly valve on the upstream side of the Howell-Bunger valve will permit repair and maintenance of the Howell-Bunger valve. . . .

L2.5 Power Facilities

L2.5.1 Intake

Intake will be located on the left bank of the river about 260 meters upstream from the dam axis. It consists of an entrance structure, a horizontal tunnel of about 173 meters in length and a shaft of about 33 meters in depth. The entrance structure will be shaped in bellmouth and equipped with fixed trashracks. The elevation of the entrance sill is at El. 195.0 m. The horizontal tunnel will have a circular section of 6.0 meters in diameter. The shaft is also

Š., 1

circular sectioned and has the diameter of 6.0 meters with about 80 meters downstream from the entrance structure, intake gate and guides are provided with stoplog facilities. The gate will be operated through the gate shaft located at El. 245.0 m.

L2.5.2 Penstock (1,2,3,3,4) (1,2,3,4)

A penstock line will be branched off from the diversion tunnel at about 70 meters from the diversion outlet. The 6.0-meterdiameter penstock will be about 90 meters long. It will be underground structure for the 75 meter upstream section. and for the rest 15 meter downstream section it will be an open structure to be backfilled. At the downstream end, the penstock will befurcate into 3.0, -meterdiameter penstocks leading to the distributors. A 1.0 -meter-diameter outlet pipe will branch off from the 3.0, -meter-diameter. penstock of the south side and lead to a Howell-Bunger type, outlet valve on the downstream side of the powerhouse.

> يرين سي المريح المريحية المريح المريحية الم

> > 2 * 7,9 5 L - 4, 5

L2.5.3 Powerhouse

The powerhouse will contain two 30,000 kW units. It will be located on the left bank of the river. Access to the power house ' from the dam crest will be made by a service road to be constructed on the left bank. The powerhouse will be of the outdoor type.

The powerhouse will be of reinforced concrete structure. Protection from tailwater level of El. 159.7- m corresponding the routed probable maximum flood will be provided by the outer walls.

The preliminary design of powerhouse and generating equipment are shown in Fig.-L3. L2.5.4. Transmission Line and Receiving, Substation

The transmission route from the Morolica powerplant to the Pavana-substation on the existing 256 kV transmission line will be jabout 60 km in length. A single circuit line at a line voltage of 138 kV will be sufficient to carry the entire output of the hydroplant.

transformer will be put into the Pavana substation. No step-down transformer will be needed because the existing 256 kV line is operated at 138 kV.

L2.6 Access and Preparatory Works

, '' , '' , ''

4-

Access to the damsite will be made without any difficulty through the existing gravel metaled road from the Pan American Highway near the Choluteca City to Morolica town via Orocuina and Apacilagua villages. The damsite is located between Apacilagua and Morolica at the distance of about 10 km from both Apacilagua and Morolica. The road runs along the right bank of the Choluteca river and is maintained fairly well. A slight improvement work will be sufficient as an access road to the damsite.

An open flat space in the right bank side river terrace extending at a little downstream from the damsite will be used for temporary works.

Office facilities and living quarters for general administration and construction supervision will be located in the river side flat land probably near Las Savilas village located several kilometers downstream of the damsite. There will be no problem to secure sufficient space for contractor's camping facilities.

--L(9);-¹ >

L3. COST ESTIMATE

— L 10.-.

L3.1 Construction Cost and the second of the states of the

The construction cost of the Morolica Multipurpose Dam Project is estimated based on the parliminary design as described in L2, at 1977 price level. The irrigation facility cost is considered the same as that of the proposed irrigation plan.

and the set of the set

The construction cost of the Morolica dam and power station is estimated to be US\$95 million including the cost of diversion work, main dam, spillway, waterway and powerhouse. The cost breakdown is shown in Table-L2.

L3.2 Operation, Maintenance and Replacement Cost

The operation and maintenance cost of the Morolica dam and power station is estimated to be US\$270,000 annually, as explained below.

USS/Year
150.000
r 30,000
80,000
<u>10.000</u>
120,000

The economic life of mechanical and electrical equipment is 25 years. Therefore the replacement cost of such equipment is considered at every 25 years. In view of the residual valve, 90% of the initial cost is taken as the equipment replacement cost.[×] L3.3 Investment Disbursement'Schedule

· . • ,

.

...

Based on a preliminary implementation schedule, the investment disbursement schedule is prepared and shown in Table-L3.

- .

. . . .

~

ξ.s.

entigentige definition of a stable and the point that with the stability of a

- Li 11 -

L3:4 Cost Stream? M. W. W. Charger and Samery at the Content of the second

da active a for the set of a state of the set of a common facility of dam, Cost streams are shown in Table-L4 for a common facility of dam, for power facilities and for irrigation facilities. and the power recentered and the fit was a line of the second

L4. PRELIMINARY ECONOMIC ANALYSIS

 $L4.1 \quad Bene fit \\ (3.5) = (1.5) + ($

The proposed Morolica multipurpose project will be installed two units of 30,000 kW generating capacity, and the 90% dependable peak output and annual averaged energy output are expected to be 60,000 kW and 181.2 GWh, respectively, as shown in Table-LL. Alternative No.2.

Power benefit is calculated based on the unit power benefit, i.e.. capacity benefit and energy benefit described in ANNEX F. A negative benefit due to inundation of Morolica valley is duly considered.

The benefit streams are shown in Table-L4, for power benefit and irrigation benefit. Irrigation benefit is taken at the same as in the proposed irrigation plan:

the the former

L4.2 Economic Analysis

A preliminary economic analysis is made and the internal rate of return is calculated to be 11.5 %. For the estimation of economic cost, the cost estimated in L3 is reduced by 10% except engineering and general expense, and also except land compensation. Engineering cost and general expense is reduced by only 2% as in the proposed irrigation project. Land compensation cost is considered as a transfer payment and is not included in the economic cost.

Benefit-cost curves are prepared by means of calculating present. values of benefit and cost at different discount rate. The present values of benefit and cost thus calculated are shown in Table-L5. The benefit-cost curves shown in Fig.-L4 indicate that the Morolica project if developed for only power generation purpose will have an internal rate of return of 6.85 %, and also if developed for only irrigation purpose, an internal rate of return will be 7.60 %.

Cost allocation is made and the result is shown in Table-L6.

L5. CONCLUSIONS

The Morolica Mulipurpose Project is formulated for irrigation of about 20,000 ha and for power generation of about 180 GWh per year by installing 2 units of 30.000 KW each; so as to make use of the water and land resources of the Choluteca basin to the maximum extent. It is also possible to plan the project to irrigate all the potential

. – L 13 – – 🔿

-irrigation area of about 30.000 ha in the basin and in this case the optimum power installation will be around 40,000 KW to 45,000 KW.

The project can be implemented to construct a dam of the proposed scale with the power installation of 2 units of 20.000 KW and to irrigate 20,000 ha of the proposed irrigable area. as the first stage development. In this case the minimum operation hours of power generation can be secured 7.5 hours a day instead of 5.0 hours in case of 60.000 KW installation. In the future when further development is required for either power generation or irrigation. the second stage development can be effectuated by either installing an additional unit of 20.000 KW or by increasing the irrigation area to 30.000 ha as the case may be.

The Morolica project, though the internal rate of return of the project is comparable with the proposed irrigation project of constructing a dam at San Fernando site, includes the following problems or disadvantages when the project is compared with the proposed San Fernando irrigation, dam project.

(i) The initial investment cost is estimated to be as high as about US\$150 million and a certain difficulty is anticipated to prepare this much amount of fund in a short period to meet an urgent requirement for irrigation development in the Choluteca plain. The breakdown of the initial investment cost is shown below.

Willion USS) Common facilities (Morolica dam) (Land compensation) Power facilities 30.52 Irrigation facilities, a second control to a second (Land compensation) the second shart grant give bet good at the second state Sub-total Price contingency (about 20%) The second of the second se 150,00 States Total investment cost " (ii) In case of multiple purpose development, several government organizations will be involved for the implementation of the project and it is probable to take considerable time in the coordination of such organizations before making a decision to implement the project. This might hamper the smooth and timely implementation of the project. (iii) The project inevitably involves the inundation problem of almost whole area of the Marolica valley. It is necessary to obtain agreement of the inhabitants to be resettled and a resettlement program should be carefully prepared and explained fully to the inhabitants. This process also requires time and possibly causes delay in implementation. The above considerations might conclude that the proposed San Fernando irrigation dam plan would be more recommendable than the

Fernando irrigation dam plan would be more recommendable than the Morolica multipurpose project, except in case that the power authority of Honduras, i.e. ENEE, shows keen interest to the Morolica project and take up the project to be implemented before the construction of the El (ajon large scale hydropower project.

MOROLIC MOROLIC	A' MULTÍPURPO	DE DAM PLAN	
and the second and the second se			:
Alternative No.			·*3·
	231.0	* • ⁷ 237.0 ·	243.0
LWL (El. m)		204.0 .	
Net Storage (MCM)	445		730
Dam Height (M)	۰ <mark>. 88 .</mark> 0	94.0	100.0
Power			ł
Installed capacity (MW)	50	60	70
Dependable peak (NW)	50	60	70 70
Annual energy output (GWh)	161.4	181.2	198.4
$Q \max. (m^3/s)$	97.6	111.9	121.7
2 9 92 2 1 2 2 2 2 2 2 1 2 2 2 2 2 2 2 2 2 2			
$\mathcal{O}_{\mathcal{O}}}}}}}}}}$	16,000	16,000	16.000
Cost (1,000 US\$)			
Dam cost	44,010	49,440	55,410
Power facilities	21,330	23,460	24,980
Irrigation facilities	23,120	-	
Sub-total	88,460	96,020	•
Eng. & Phy. Contingency	-	25,450	27,430
Sub-total	111,900	-	•
Interest during construction	12,200	·	
Total cost	124,100	134,710	145,210
Benefit (Capitalized by 8% disco	unt rate)	(1.000 USS)	
Power benefit	77,150	90,270	102,760
Irrigation benefit	90,190	90,190	90,190
Total benefit	167 340	180,460	

Table-L2:-	COST ESTIMAT MOLORI CA MUL	TIPURPOSE DAM		
ſtem ·	- Unit	Quantity	Unit Price	
1. Access road & quart	ers L.S.			530,000
2. Diversion and coffe	ring 🙏 🖓	-		
Excavation	•	* *	s all stapped	alter inte
Common	·, · m ³	45,000	- 2.5	112,500
Rock	3	30,000	4.0	
Tunnel		. 7,4 . 400,	30.52.74	2,232,000
Concrete	**		. Carling and	n contra de la contra La contra de la contra
inlet & outlet	. m ³		°, , , ,	290.000
Tunne 1	_ m ³	14,700	- 100 (L)	1.470.000
Plug	m ³	9,000	70	630,000
Reinf. steel	ť	750	^A 700 d ^a	525.000
Tunnel steel suppo	ort t	300	.	225.000
Tunnel grouting	L.S.	·		300,000
Cofferdams Excavation	· · · _3	120.000	1.5 1.5	······································
Impervious fill		69.000	4.0	276,000
Gravel fill	m * * *** 3 * * *	240.000	ະສະ,) - ກາກ ເຫັດ2.5	600.000
Sub-total		· · · · · · · · · · · · · · · · · · ·		7.080.500
3. Dam	X-1 . 1	مهمن بر می پریه بر آفه شریع آ سریم بر ایک می		
Excavation	్ శివిష్ కి సం గు	· · · ·	54 g. 4, 54 (1997) 19 g. 4, 54 (1997) 19 g. 4 (1997)	<u>,</u> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Common	.3 ×	, . `106,000 [°] , .	,1 .5) ⁽¹⁾ ,	159.000
Rock	⇒ 3´- -m-,	46,000	··· 3.0 ···	- 138.000
Concrete		• . • • • •		
Gallery	·** · ··**3	13:000 -t	. 100	1.300.000
Reinf, steel	· · · · · · · · · · · · · · · · · · ·	350	™ 700 - 200 - 2	245.000
Asphalt facing	, 3	32,000	- 100 • •	3.200.000
Foundation.treatment	L.S.	n e e e e	÷ ** <u>;</u>	2.750.000
Dam embankment	•		- -	- - -
Filter	3 m	134,000	°5 . 0	670,000
Rockfill	m ³	4,920,000	ِّ 5. 0 ِ ``	24.600.000
Sub-total	`			33.062.000

Table-L2: COST ESTIMATE

	- L 17 -			4 5
tourise of the till tem to to the factor	Unit:	Quanti ty	Unil Price (US\$)	Amount (US\$)
4. Spillway				
Excavation	>		, , , ,	
and the state of the source of the state of	3 m	,770,000	2.5	1.925.000
Hard rock	3`	1.830,000	- '	
Concrete		·		
Grest ^{**}	3 ' m	5,100	[°] 70	357.000
Bucket	"3	3.400	70 ^{* *}	238.000
etality of Pier " the state	"3	3,000	⁻ 80	240,000
Wall H	3 m	11,500	80	920,000
(a) the Chute	3 	2.600	75	195.000
Shot concrete .		- 3,500	100	350.000
Reinf. steel	t	850	700	595.000
Spillway bridge	L.S.			80.000
Anchor bar	t	40	1,200	48,000
Gate	t	240	5,500	1.320.000
Sub-total	· · · · · · · · · ·			6.268.000
Excavation				
🖅 🐨 👘 Intaké Tentrance 👘	3 m	32,000	2.5	80.000
👝 🖓 👌 Tunne L	m ³	9.200	40	368.000
- Shaft	3 m	3,500	80	280.000
" Concrete	-		-	
u. Lucio de la c	3 m	1,500	80	120.000
Tunne 1	ື ສີ	5,900	100	590.000
ه من به من منه منها راهموه محمد و بو بو بر ۲۰ و ومی من من بر من من و برم ¢ ۲۰۹۵ ما بر بر بر من		2,300	120	276.000
Reinf. steel	1	380	700	266,000
Penstock	t.	150	3.000	450,000
ituatuan	•		•	
Gate	t.	70	5.500	* 385,000

.

....

2.965.000

Sub-total ۰,

	item	-, 1L (18 ;) -, 2. Uni tr (18 ;)	Quantity	Unit Price (US\$)	Amount' (US\$)
6.	Powerhouse & tailrace	_ ^	ال المراجع الم من المراجع المرا		
	Excavation	ž	، ريد ان 	ه سم سوي ريون کې د کري سم سوي ريون کې کې کې کې کې	، ، ، ، ، ، ، ، ، ، ، ، ، ، ، ، ، ، ،
	Common	, m	60,000	2.0	120,000
	Rock	3 (60,000	5.0	300,000
	Concrete	-	т 2		
	Foundation	m ³ %	10,000	70	700,000
	Substructure	3	10,600	80,	848.000
	Superstructure	ی ³ ش	4,000	120	480.000
	Reinf. steel	t	800	700 🔑	560,000
	Architectural work	- L.S.,		، ــــــــــــــــــــــــــــــــــــ	930.000
	Sub-total	<u></u>			3.938.000
7.	Generating equipment	L.S.	د . بر معمد ا	· · · · · · · · · · · · · · · · · · ·	14.180,000
8.	Transmission line and s	ubstation	۴ 	1947 Barra 1944 Barra 194 1947 Barra 1947 Barra 1947 1947 Barra 1947 Barra 19	
	138 KV line	km	60	30.000	1,800,000
	Stepdown transformer	ī,.S.	<u></u>	- 14 24 33	200.000
	Sub-total				2.000.000
9.	Land compensation	ha.	3.000	- 600	1.800.000
ıó.	Engineering and general	expenses		5 y 4 2 1 1	10,500,000
<u> </u>	· · · · · · · · · · · · · · · · · · ·	, 	• <u></u>	·····	
N	Sub-total (1 to 10)	د		5 <u>-</u> - 287 - 57	32,323,500
11.	Physical contingency (1			ू २ इ.स. २२२२	12,348,500
	Total (1 to 11)	ي ج ب ب		5° 2 4 2 4	94,672,000

Table-1.3 INVESTMEN	r disbu	RSEME	NT SCHE	DULE		
ner men en e	94 - -		ω ^{1*} κ + κ	(Unit	: million	115\$)
	1978	1979	1980	<u>1981</u>		<u>83 Tota</u>
- 1.it Common Facilities (Morolica da	n)=		ا موجد موجد د منا			<u>.</u>
1.1 Access road & quarter	· · · · ·	, ó. 40	0.13		•	0.5
1.2 Diversion & coffering			7.08			7.08
1.3 Dam & spillway	1 2	2.26	8.21	19.14	9.72	39.3
1.4 Engineering & administration	2.11	2.11	0.94	0.94	0.94	7.0
Sub-total	2.11	4.77	16.36	20.08	10.66	53.98
1.5 Physical contingency (15%)	0.32		2.45	3.01	1.60	8.10
Total (413)	2-43	: 5.49	18.81	23.09	12.26	62.08
2. Power Facilities	L		•			
2.1. Intake, penstock & outlet	4,	0.52	0.28	0.80	1.36	2.90
2.2 , Powerhouse & tailrace	u			3.25	0.69	3.94
2.3. Generating equipment	.*	2.30		2.76	6.48	14.18
2:4 Transmission line & substation	n · ·		0.33	0.37	1.30	2.00
2.5 Engineering & administration	1.00	0.56	0.55	0.55	0.80	3.40
". (. Sub-total⊊" · · · · · · · · · · · ·	1.00	3.38	3.80	7.73	10.63	26.54
2:6: Physical ² contingency (15%)	0.15	0.51	0.57	1.16	1.59	3.98
Total , see	1.15	3.89	4.37	8.89	12.22	30.5
3. Irrigation Facilities				•		
3.1 @ Preparatory, works		0.56	0.32			0.88
3.2 El Papalon intake weir			1.03	1.29	1.28	3.60
3.3 Canal network	• :	3	0.54	5.34	3.48 0.	91 10.23
3.4 Drainage & farm road in the	•		0.20	1.79	0.79 0.	73 3.5
3.5 Don-farm construction 4			0.25	2.34	1.02 1.	25 4.86
3.6 Engineering & administration	0.73	1.37	0.53	0.55	0.54 Ō.	02 3.74
.14.Sub-totalm:	0.73	1.93	2.87	11.31	7.11 2.	91 26.80
3.75-Physical contingency (10%)	0:08:	0.19	0.29	1.13	0.71 0.	29 2.69
			3.16	12.44	7.82 3.	20 29.5

Only 10% of physical contingency is considered because the irrigation design is prepared at the feasibility study level.

e traditional

....

		Tuble t	AND T	
	-	Table-L	4 COST AND I	(libit. 1.000 USS)
	. *	» ، ،	مي ک ^{ور} کار ايک ^{رر} و کلومر تو است ميک	
No.			Economic Cos	st
of Year	Year	Dam	Power	Irrigation Power Irrigation
1.	1978	2,380	1,130	790
2.	1979	5,130	3,550	2,030
3.	1980	17,020	-3, 980	:
4.	1981	20,870	8,050	11.240
5.	1982	11,120	11,080	7.090 34,380
6.	1983	120	150	3,950 1,476 2;500
7.	1984	· 120	150	1,080
8.	1985	120	150	1,080 4,427 6,760
9.	1986 [°]	120	150	1,080.4,427.4,427.4,8,620
10.	1987	120	150	1;080 4;427 9,170
29.	2006	120	150	1,080 4,427
30.	2007	1,350	16,140	2.290 35.369 37.369
31.	2008	120	- 150	1,080 4,427
				· company and a start of the start
55.	2032	[~] 120	- 150	1.080
	-			served an depart of the servery of the server of the serve
	Т	able-L5 l	PRESENT VALUE	S OF COST AND BENEFIT.
		· ·	Discou	nt Rate (%)
			6	8
-		•••		
lo⊴t	1	uur in tuu un t	······································	AA 1A2 A3 000
	Joint facil		47,569	44,142 41,099 38.472 38.472
	Power faci		· 26 ⁻ .774	22.297 20.389.2 389.3 389.8 389.8 380.3 4 22.297 22.297 20.389.2 389.2 22.131
	Irrigation	- 1aC111110	34:134 ····	22.131
<u> </u>			109 477	95.213 86.473 79.406
2000	Total		108,477	95,213 86,473 79,406
Benef -		eta" ^{tot s} i	80.159	60.612 47.952 39.240
	Power bene. Irrigation		80.159 98,588	المتراجع والمتعادين والمتعالي والمتعالي والمتعالي والمتعاد والمتعاد والمتعاد والمتعاد والمتعاد والمتعاد والمتعا
	irrigation	peneiit		68,042 49.108 36,699
	Total	. <u> </u>	178,747	128,654 97,060 75,939

, 1, 21 - L 21 -			• • •
	4 4 2		
Table-1.6 COST AL	IOCÁTION Power	(Unit: 1.000 Irrigation	USS) Total
1. Benefit	60.612	68,042	128,654
2. Alternative Cost	60,612 ^{.2}	$50.616\frac{3}{3}$	111,228
3. Justifiable Expenditure 4	60.612	50,616	111,228
4. Separable Cost			
Capital Cost	19.459	19.662	39,121
ON&R Cost	2,838	9.112	11.950
Total	22.297	28,774	51.071
5. Remaining Benefit -5	38,315	21.842	60,157
6. Percent Distribution	63.7%	36.3%	100.0%
7. Allocated Joint Costs			
Capital Cost	27,404	15,617	43.021
OM&R Cost	714	407	1,121
Total	28,118	16.024	44,142 <u>/6</u>
8. Total Allocated Cost 7			
Capital Cost	46.863	35.279	82.142
OM&R Cost	3.552	9.519	13.071
Total	50.415	44.798	95.213
9. Benefit-cost Ratio-8	1.20	1.52	1.35
		t	
Remarks:			
<u>1</u> : Present worth benefit at the discou	int rate of	8%	
2: Alternative thermal power cost incl			
-3: Cost of San Fernando irrigation pu	rpose dam a	nd irrigatio	n facilitie:
including capitalized OM&R cost			

s

•

4 : Smaller value of 1. and 2.

5: 3. - 4.

6 : Total of joint facility cost at 8% discount rate in Table-L5. , . .

<u>7</u>: 4. 7. <u>8</u>: Benefit-cost ratio at 87 discount rate

