Appendix 6.3.4 Examination on Profitability of Tuna Canning Factory in the event of Relocation from Zone 1 to Phuket

in the second

After the urgent plan for the Fishery Complex on the Andaman Sea for the target year of 2005 is put into effect, the Phuket fishing port owned by the Fish Market Organization (FMO) will be improved and expanded. Furthermore, the land for fish processing factories will be developed behind the fishing port.

As a result, the fishing port will not only maintain the present landing volume of fish, but will increase their landing volume to about 72,000 tons of tuna and skipjack, due to the use of expanded facilities.

It will become easier for canned tuna factories to procure raw material and consequently, canned tuna factories presently operating in Bangkok, Samut Sakhon, and Samut Prakarn will move to Phuket. The Board of Investment (BOI) has defined the former area as Zone I and the latter area as Zone 3. Consequently, factories will be given an incentive to move their factories in the form of favorable treatment by investment laws set up by BOI and the Industrial Estate Authority of Thailand (IEAT).

This study is an analysis on whether the investments made by factories to move to Phuket will be profitable or not, by comparing the profitability of one tuna processing factory which was used as a model case in the event of removal under the project and its profitability under existing conditions (without project implementation).

### 1. Methodology

This study evaluated the feasibility of investments required to move the factory location, according to the profit arising from the balance of expenditures such as investment cost and operating cost and income with and without the project for the project's 20 year period.

#### 2. Given Conditions

The given conditions for the estimation are as follows and the details are shown in Attached Sheet No. 5.

(1) Exchange rate

US\$1 = Baht 25.33

Baht 1 = US\$0.0395

(2) Canned tuna factory, model case (one company operated factory)

### With the Project

The factory will be moved from Zone 1 (Bangkok, Samut Sakhon, and Samut Prakarn) to the export processing zone (EPZ) of Phuket in Zone 3.

- 1) Facilities
- Land: Owns 30 rai of land in Zone 1. In the event the factory is moved, the land will be sold and utilized as investment for the move. The amount of land allocated for the factory in Phuket is 28 rai.
- Buildings: The total area of the newly constructed buildings will be 14,740m<sup>2</sup> and the facilities will be comprised of a factory (7,200m<sup>2</sup>), office (740 m<sup>2</sup>), service facility (1,300 m<sup>2</sup>), dormitory (4,500 m<sup>2</sup>)
- Utility and infrastructure for buildings: Newly constructed.
- Machinery and equipment for three lines of canned tuna production: To be moved to the new location
- Cold storage: The cold storage with an actual capacity of 600t will be moved to the new location and consists of the panel and equipment. Half of the panel will be removed and other half will be newly purchased.

### 2) Production capacity

Production capacity: 40t/day (raw material base), operating 300 days per year Working hours per day: 8 hours

These conditions will be constant for 20 years.

3) Volume of raw materials (tuna fish) and purchase price:

- Volume: 12,000 tons/year

- Purchase price: US\$912/ton or Bahts 23,079/ton

Remarks: The transport cost of raw material from the West Indian Ocean to Phuket is cheaper than the transport cost to BKK. Its value is US\$13.0/ton (refer to Appendix

6.2). The purchase price at BKK is US\$925/ton or Bahts 23,408/ton.

4) Export volume of canned tuna and price;

- Volume: 7,000 tons/year

Price (FOB at Phuket): US\$22.5/case = US\$2,543/ton = Baht 64,380/ton
 1 case = 307 type cans x 48 cans = 9kg/case

### Without the Project

The factory was assumed to be an existing factory operating in Zone 1 with the same conditions as the factory above in "With the Project", i.e. facilities, capacity, operating conditions, export volume, export price of tuna cans, and purchase volume of raw materials, excluding purchase price.

1) Volume of raw materials (tuna fish) and purchase price

- Volume: 12,000 tons per year

Price: US\$925/ton or Baht 23,408/ton

### (3) Investment cost and source of funds

(Unit: Million Bahts)

Investment Cost	Self-financing (40%)	Loans (60%)
157.4	65.4	92.0

### **Loan Conditions:**

With the Project (funded by IFCT)

Loan Period: 20 years Grace Period: 5 years Interest: 11%/year

Without the Project (Commercial Bank)

1.3% year of the sales amount

Note: Without the project the interest was estimated to be 1.3% of the sales amount, depending on the income statement of the fish processing companies registered in the Thailand stock market.

- (4) Operational Cost: The breakdown is shown in Attached Sheet No. 5.
- Raw material and auxiliary material costs (can, carbon box, label, oil)
- Labor cost, water and electricity costs
- Local transport costs (from wharf to factory, factory to port)
- Maintenance and depreciation costs, interest
- Administrative expenses
- (5) Favorable treatment stemming from laws encouraging investment as shown in Attached Sheet No. 1.

## 3. Results of the Study

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1

Relocation of a factory ( with the project ) as a model case is more profitable than no relocation ( without the project ) and the balance of net profit from first year to 20th year between both cases will be million Bahts 147.8.

The details of income statement and cashflow are shown in Attached Sheet No.2 and No.3.

The detailes of profit are shown in Remarks of Table of Attached Sheet No.2, Page 13.

#### Attached Sheet No. 1

**Favorable Treatment Stemming From Incentive Investment Laws** 

(A comparison of: Moving the factory with the Project and keeping the existing factory without the Project)

## With the Project

- 1. Incentive investment law by the Board of Investment (BOI) (With the Project)
  Phuket is located in Zone 3, a region where investment is being encouraged under the
  BOI law established in 1993. If a factory moves to Phuket, it is qualified to receive
  special tax treatment under this law.
- (1) Corporate tax: Taxes are exempted for eight years and can be further reduced to 50% for five years after the ninth year.
- (2) Special Favorable Treatment: The double cost of transportation, electricity, and water will be deducted from taxable income for ten years.

Up to 25% of equipment installation and infrastructural investment costs may be deducted from taxable income for one year.

- (3) Import Tax on Machinery: No tax exemption
- (4) Import Tax on Raw Materials: Tax exemption on fish used as raw material for processing and export

 Favorable treatment by the Industrial Estate of Thailand Act (IEAT) established in 1979

If a company joins an industrial estate, it is eligible to receive and conduct the following after obtaining BOI approval.

- (1) Own land in an industrial estate to engage in industrial activity
- (2) Recruit foreign nationals to Thailand who are (a) skilled workers, (b) experts, (c) spouses or dependents of persons under (a) or (b) in appropriate numbers
- (3) Grant a work permit for foreign nationals

- (4) Take out or remit foreign currency from Thailand, if such currency is (a) capital brought into Thailand by an industrial operator and dividends or other benefits accrued therefrom, (b) foreign loan brought for the purpose of investing in the activities under an agreement approved of by the Board, including the interest thereon and etc.
- 3. Incentive Law for Export Business

If a company joins the Export Processing Zone (EPZ), it is eligible to receive the following tax exemptions.

- (1) Import tax exemption on construction materials for a factory
- (2) Import tax exemption on production machinery and equipment
- (3) Import tax exemption on raw materials and spare parts for production
- (4) Export tax exemption on exported products and sub-products
- 4. Remark: Tax System
- (1) Corporate tax: 30% of taxable income
- (2) Added value tax: tax exemption on export stocks

(3) Business tax on imported goods: 1.5% to 9%

(4) Export tax: Exempted

### Without the Project

1. Most of the factories in Bangkok and Samut Prakarn are presently operating in Zone 1 which has been promoted with incentive investment laws by BOI. Factories are eligible to receive the following special tax exemptions under this law.

- (1) Corporate tax: Taxes are exempted for five years under the following conditions:
- (a) Over 80% of total sales is generated by exportation
- (b) Located in an industrial estate or an incentive industrial area recognized by BOI
- (2) Special favored treatment: None
- (3) Import taxes on machinery: Import taxes may be reduced 50% under the following conditions:
- (a) Over 80% of total sales is generated by exportation
- (b) Located in an industrial estate or an incentive industrial area recognized by BOI
- Special treatment under the Industrial Estate of Thailand Act (IEAT) established in

If a factory relocates to the Industrial Estate, it is eligible to receive special treatment same as in the case of with the project.

3. Incentive law for export business: None

4. Remark: Tax System

Same as above (as in the case of with the Project)

# Attached Sheet No. 2 (1/3)

# Revenue and Expenses of Canned Tuna Factory With and Without the Project

			1 1	Unit: Million Baht
Items		With Project		Without Project
		(Relocation)		(No Relocation)
	1st Year	2 - 6 Years	7 - 20 Years	I - 20 Years
Revenues	450.7	450.7	450.7	450.7
Expenses				
Raw materials	276.9	276.9	276.9	280.9
Auxillary materials	69.8	69.8	69.8	69.8
Can cost	(52.2)	(52.2)	(52.2)	(52.2)
Label cost	(4.5)	(4.5)	(4.5)	(4.5)
Carton Cost	(3.1)	(3.1)	(3.1)	(3.1)
Oil Cost	(10.0)	(10.0)	(10.0)	(10.0)
Labor cost	36.0	36.0	36.0	40.6
Transportation cost	0.5	0.5	0.5	1.5
Utility Cost	7.2	7.2	7.2	7.2
Removal Cost	10.7	0	0	0
Land Rent	2.1	2.1	2.1	0
Maintenance cost	2.4	2.4	2.4	2.4
General Expenses	18.0	18.0	18.0	18.0
(Selling & Administrative Exper	nses)			
Depreciation Cost	10.1	10.1	10.1	10.1
Expenses Before Interest	433.7	423.0	423.0	430.5

Attached Sheet No. 2 (2/3)

Income Statement of Canned Tuna Factory With and Without the Project

		N						7	Unit: Million Bant
			≯	With the Project					Without Project
Items			:		*				
	1st year 2	2 to 5 years	6 years	7 years	8 years	9 years	10 years	11 years	1 to 11 years
Revenue	450.7	450.7	450.7	450.7	450.7	450.7	450.7	450.7	450.7
Expenses		:							
Expenses Before Interest	433.7	423.0	423.0	423.0	423.0	423.0	423.0	423.0	430.5
Interest	10.1	10.1	10.1	9.5	8.8	   	7.4	6.7	5.9
Existing Interest	0	0	0	0	0	0	0		. (6.5)
New Interest	(10.1)	(10.1)	(10.1)	(6.5)	(8.8)	(8.1)	(7.4)	(6.7)	0
Expenses After Interest	443.8	433.1	433.1	432.5	431.8	431.1	430.4	429.7	436.4
Income Before Taxes (A)	6.9	17.6	17.6	18.2	18.9	19.6	20.2	21.0	14.3
Deduction of Income & Profit	19.0	15.4	15.4	15.4	15.4	15.4	15.4	0	0
Transp. x 2 for 10 years	(O:1)	60	6:1)	(1.9)	(1.0)	(0.1)	(0.1)	0	0
Utility x 2 for 10 years	(14.4)	(14.4)	(14.4)	(14.4)	(14.4)	(14.4)	(14.4)	0	0
Install/Infra x 25%	(3.6)	0	0	0	0	0	0	0	0
Taxable Income	-12.1	2.2	2.2	2.8	3.5	4.2	4.8	21.0	14.3
Corporate Tax							٠	•	
Corporate Tax 30%	0	0.7	0.7	8.0		e.	4.1	6.3	4.3
Tax Exemption					1				
100% for eight years		0.7	0.7	8.0	1.1		:		
50% for five years						0.7	0.7	3.2	
Tax Payment (B)	0	0	0	0	0	0.7	0.7	3.2	4.3
Net Profit (A-B)	6.9	17.6	17.6	18.2	18.9	6.81	19.5	17.8	10.0
Net Profit Margin for Sales (%)	3.	3.9	3.9	4.0	4.2	4.2	4.3	3.9	2.2

Income Statement of Canned Tuna Factory With and Without the Project

							,		į	Unit: Million Bahts
	27.00 - 27.40	With th	the Project				:			Without Project
Items	12 years	13 years	14 years	15 years	16 years	17 years	18 years	19 years	20 years	12 to 20 years
								1.4		
Revenues	450.7	450.7	450.7	450.7	450.7	450.7	450.7	450.7	450.7	450.7
Expenses		*:								
Expenses Before Interest	423.0	423.0	423.0	423.0	423.0	423.0	423.0	423.0	423.0	430.5
Interest	6.1	5.4	4.7	4.1	3.4	2.7	2.0	4.	0.7	5.9
Existing	0	0	0	0	0	0	0	0	0	(5.9)
New	(6.1)	(5.4)	(4.7)	(4.1)	(3.4)	(2.7)	(2.0)	(1.4)	(0.7)	0.0
Expenses After Interest	429.1	428.4	427.7	427.7	426.4	425.7	425.0	424.4	423.7	436.4
Income Before Tax (A)	21.6	22.3	23.0	23.6	24.3	25.0	25.7	26.3	27.0	14.3
Deduction of Income & Profit	0	0	0	0	0	0	0	0	0	0
Transp. x 2 for 10 years	0	0	0-	0	0	0	0	0	0	Ö
Utility x 2 for 10 years	0	0	0	0	0	0	0	0	0	
Install/Infra x 25%	0	0	0	0	0	0	0	0	0	0
Taxable Income	21.6	22.3	23.0	23.6	24.3	25.0	25.7	26.3	27.0	14.3
Corporate Tax							:		,	
Corporate Tax 30%	6.5	6.7	6.9	7.1	7.3	7.5	7.7	7.9	8.1	4.3
Tax Exemption				vI						
100% for eight years	0	0	0	0	0	0	0	0	0	0
50% for five years	3.3	3.4	0	0	0	0	0	0	0	0
Tax Payment (B)	3.3	3.4	6.9	7.1	7.3	7.5	7.7	7.9	8.1	4.3
Net Profit (A-B)	18.3	18.9	16.1	16.5	17.0	17.5	18.0	18.4	18.9	10.0
Net Profit Margin for Sales (%)	4.1	4.2	3.6	3.7	3.8	3.9	4.0	4.1	4.2	2.2
Bonnacker Tokal Nort Develop			1							

Remarks: Total Net Profit

With Project: Sum of net profit from first to 20th year = Million Bahts 347.8 Without Project: Million Bahts10.0/year x 20 years = Million Bahts 200.0 Balance: Million Bahts 147.8

8

# Attached Sheet No. 3

### **CASH FLOW**

									Unit:	Million	Bahts
Years	0	1		3	4	5	6	7	8	9	10
1. Source of Funds	157.4	17.0	27.7	27.7	27.7	27.7	27.7	28.3	29.0	29.0	29.6
(1) Loan	92.0										
(2) Equity	65.4	ą.					1 1 1	1		<b>.</b>	
(3) Depreciation	•	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
(4) Net Income		6.9	17.6	17.6	17.6	17.6	17.6	18.2	18.9	18.9	19.5
2. Uses of Funds	157.4	0	0	0	0	0	6.1	6.1	34.2	6.1	6.1
(1) Construction & Reloc	ation 157.4						1				- :
(2) Reinvestment		•				:		1 2 2 2	28.1		
(3) Repayment of Loan							6.1	6.1	6.1	6.1	6.1
3. Net Cash Flow	0	17	27.7	27.7	27.7	27.7	21.6	22.2	-5.2	22.9	23.5
					<del></del>						
	· .				·	4. 1		200			
Years	11	12	13	14	15	16	. 17	18	19	- 20	
1. Source of Funds	27.9	28.4	29.0	26.2	26.6	27.1	27.6	28.1	28.5	29.0	7
(1) Loan		+		100							
(2) Equity			* .		1.41	461		1.	11 1		
(3) Depreciation	10.1	10 I	10.1	10.1	10.1	10.1	. 10.1	10.1	10,1	10.1	
(4) Net Income	17.8	18.3	18.9	16.1	16.5	17.0	17.5	18.0	18.4	18.9	<u> </u>
2. Use of Funds	6.1	6.1	6.1	6.1	6.1	11.7	6.1	6.1	6.1	6.6	:

6.1

22.9

6. Ł

20.1

6.1

20.5

6.1

22.3

6.1

21.8

5.6

6.1

15.4

6.1

6.1

6.1

6.6

22.4

3. Net Cash Flow 29
Remarks: Net Income: Actual Profit

(1) Construction & Relocation

(2) Reinvestment

(3) Repayment of Loan

#### Attached Sheet No. 5

### Details of Revenue and Expenses

- Estimation of revenue concerning canned tuna
- (1) Export price of canned tuna

Export Price (Chunk)

US\$22.5/carton = US\$2,543/ton = Bahts 64,380/ton

Remarks: (1) 1 carton box = 307 type cans x 48 cans = 9kg/carton. Price is FOB at BKK.

- Export price has been estimated based on the information obtained in "Export Statistics" from Jan. to Sept. 1996, Department of Business Economic, Ministry of Commerce in Thailand and DOF.
- (2) Export volume
- 1) Yield ratio
- Conversion factor (weight of meat used for canning/raw material weight)

Skipjack:

Yellowfin Tuna:

45%

Source: (1) Field survey on the Fishery Complex on the Andaman Seacoast, 1996

- (2) Fish Canning Industry, USA
- Share of canned skipjack and yellowfin produced

Skipjack:

76%

Yellowfin and others:

24%

Source: DOF, 1993-1996

- Synthetic Conversion Factor (weight of meat used for canning/raw material weight)  $0.4 \times 0.76 + 0.45 \times 0.24 = 0.412$  or 41.2%
- Packing media (brine and oil) ratio

Product weight (meat + packing media)/meat weight = 1.4

(1) Field survey study on the Fishery Complex on the Andaman Seacoast, 1996

(2) Fish Canning Industry USA

1) Yield ratio (product weight/raw material weight)

 $1.4 \times 0.412 = 0.58$  or 58%

Remarks: Meat weight/product weight = 1/1.4 = 0.714 or 71.4%

Packing media weight/product weight = (1.4 - 1)/1.4 = 0.286 or 28.6%

2) Export volume

- Volume of tuna used as raw material for canned tuna

Production capacity: 40 tons/day at a raw material base

Production capacity: 12,000 tons/year (300 operating days/year)

- Export volume:  $12,000 \text{ tons/year } \times 58\% = 6,960 = 7,000 \text{ tons/year}$ 

Meat:  $7,000 \text{ tons } \times 0.714 = 5,000 \text{ tons/year}$ 

Packing media:  $7,000 \text{ tons } \times 0.286 = 2.000 \text{ tons/year}$ 

3) Export value: 7,000 tons/year x Baht 64,380/ton = Million Bahts 450.66

2. Estimated production expenses

(1) Raw material purchase costs

Assuming that the purchase price of raw material unloaded domestically is the same as that imported,

Without the Project

Skipjack: US\$870/ton Yellowfin: US\$1,100/ton

Average price:  $870 \times 0.76 + 1{,}100 \times 0.24 = US\$925/ton = Baht 23{,}408/ton$ 

Source: (1) Field survey study on the Fishery Complex on the Andaman Seacoast, 1996

(2) DOF, 1995-1996

Total purchase cost: 12,000 tons/year x Baht 23,408 = Million Bahts 280.9

With the Project

When reefers unload frozen tuna from the West Indian Ocean at Phuket, the transport cost of frozen tuna will be eliminated and the price of imported frozen tuna will be cheaper than tuna unloaded at BKK. That value is US\$13.0/ton (see Appendix 6.2).

Unit price of raw material: US\$925/ton - US\$13/ton = US\$912/ton = Baht 23,079/ton Total purchase cost: 12,000 tons/year x Baht 23,079/ton = Million Bahts 276.9

I ton of finished product:

111 cartons (1 carton = 48 cans, 9kg)

111 cartons x 48 cans/carton = 5,238 cans

1) Cost of Can

Case	Product Quantity (ton)	No. of Cans Per Ton (product)	Unit Price of Can (Baht/can)	Can Cost Million Bahts
With the Project Without Project	7,000	5,328	1.4	52.2
	7,000	5,328	1.4	52.2

2) Label Cost

Case	Product Quantity (ton)	No. of Cans Per Ton (product)	Unit Price of label (Baht/label)	Label Cost Million Bahts
With the Project	7,000	5,328	0.12	4.5
Without Project	7,000	5,328	0.12	4.5

3) Carton Cost

Case	Product Quantity (ton)	No. of Cartons Per Ton (product)	Unit Price of carton (Baht/box)	Carton Cost Million Bahts
With the Project Without Project	7,000 7,000	111	4	3.1 3.1

## 4) Oil Cost

Assuming that oil is used in 25% of the product as a packing media and brine for the

remains.

Case	Total Packing Media Weight (ton)	Share of Oil (%)	Unit Price of Oil (Bahts/ton)	Oil Cost Million Bahts
With the Project	2,000	25	20,000	10.0
Without Project	2,000	25	20,000	10.0

# 5) Total Auxiliary Raw Material Cost With/Without the Project

a + b + c + d = Million Bahts 69.8

### (3) Labor Cost

### 1) Number of Personnel

Office staff:

50 persons

Laborers:

500 persons

Total

550 persons

### 2) Labor cost including every allowance

Labor cost at Phuket:

Office staff: Baht 10,000/month, Labor: Baht 5,000/month = Baht 200/day

Labor cost at BKK:

Office staff: Baht 10,000/month, Labor: Baht 5,750/month = Baht 230/day

### 3) Total Labor Cost

Case	Employee	Number	Unit Price Baht/Month	Labor Cost Million Baht/Month	Labor Cost Million Baht/Year
With Project	Office Staff Labor Total	50 500 550	10,000 5,000	0.50 2.50	6.0 30.0 36.0
Without Project	Office Staff Labor Total	50 500 550	10,000 5,750	0.50 2.88	6.0 34.56 40.56

### (4) Local Transportation

### With the Project

Raw Material: New Jetty --> Factory (40 Bahts/ton)

Canned Tuna: Factory --> Phuket commercial port (70 Bahts, including container

handling)

## Without the Project

Raw Material: Bangkok port --> Factory (100 Baht/ton)

Canned Tuna: Factory --> Bangkok port (200 Bahts including container handling)

Case	Item	Transport Volume (tons/year)	Unit Price (Baht/ton)	Total Million Baht/year
With Project	Raw Material Canned Tuna Total	12,000 7,000	40 70	0.04 0.49 0.53
Without Project	Raw Material Canned Tuna Total	12,000 7,000 -	100 200	0.10 1.40 1.50

# (5) Utility Cost

# 1) Electricity

# a. Installed capacity

Installed capacity of power			
- Canning Plant	128kw	- 1	180 KVA
- Cold Storage	134kw		200 KVA
- Office	23kw		30 KVA
- Service Building	46kw	ľ	70 KVA
Sub-total	331kw		480 KVA
Installed capacity of light			
- Canning Plant	113kw		
- Cold Storage	10kw		
- Office	37kw		
- Service Building	20kw		
- Dormitory	90kw		
Sub-total	270kw		340 KVA
Total Installed Capacity	601kw		820 KVA

b. Electric Consumption

v. Elective Consumption		
- Power Consumption		
· Canning Plant	1,052kw	
· Cold Storage	1,660kw	hr.day hr/day
Office	138kw	/ m/day / hr/day
· Service Building		
Sub-total	3,012kw	hr/day
- Light Consumption Canning Plant	1015kw	
· Cold Storage	259kw	/ hr/day / hr/day
<ul><li>Office</li><li>Service Building</li></ul>		/ hr/day / hr/day
· Dormitory		
Sub-total	1,333kw	hr/day
Total Consumption	4,345kw	hr/day

Remarks: Electric consumption of the cold storage is negligible. The electric charge of the dormitory is collected from the boarders.

# c. Electric Charge

Basic Charge: 800kw x Baht 274/month/kw = Million Baht 0.219/month

Consumption Charge: 4,345kw hr x 25 days x Baht 1.07/kw hr = Million Baht

0.116/month

Total: Million Baht 0.335/month

Million Baht 0.335/month x 12 months = Million Bahts 4.02/year

### 2) Portable water and wastewater

According to the data from existing canned tuna factories, the water consumption volume is 10 tons per one ton of processed raw material. This volume includes all water consumption, i.e. on the production line of canned tuna and water consumption by employees.

# a. Water consumption volume

 $12,000 \text{ tons/year } \times 10\text{m}^3/\text{ton} = 120,000 \text{ m}^3/\text{year}$ 

b. Water charge

o. made dialect			
Item	Consumption	Unit Price	Total
	Volume (m <sup>3</sup> /year)	(Baht/m <sup>3</sup> )	(Million Bahts)
Potable Water	120,000	9.0	1.08
Wastewater	120,000	5.0	0.60
Total			1.68

- 3) Fuel for Boiler
- a. Fuel consumption: 950kg/day
- b. Fuel charge: 950kg/day x B5,39/kg x 300 days = Million Baht 1.5
- 4) Total Utility Cost

1

- 1) + 2) + 3) = Million Baht 7.2
- (6) Construction, relocation, repair and maintenance, and depreciation costs
- It is assumed that a canned tuna factory relocating to Phuket is a company which has been operating in Bangkok and Samut Prakan for eight years since its establishment.
- The company will rent 28 rai in the industrial estate developed behind the Phuket
  Fishing Port by the Fishery Complex Project on the Andaman Sea Coast. The company
  will construct a factory building, utilities, and infrastructure. Production machinery,
  equipment, and refrigerating machine will be relocated to the new site and half of the
  insulation panel will be relocated and the other half will be newly purchased. Equipment
  relocated to the new site is assumed to have depreciated for eight years.

### (1) Land Rental Fee

Industrial estate: Lot price (Baht/year/rai) GIZ 59,000, EPZ 73,750

Туре	Land Area	Unit Price (Baht/year/rai)	Rental Amount (Million Baht/year)
EPZ	28	73,750	2.07
GIZ	28	59,000	1.65

Remark: In the case of "Without the Project", the land is owned by the company.

# (2) Building Construction Cost

	Item	Bldg. Area (m <sup>2</sup> )	Story	Total Floor Area (m <sup>2</sup> )	Unit Cost (Baht/m <sup>2</sup> )	Construc- tion Cost	Building (Million	Utility (Million
						(Million Baht)	Baht)	Baht)
	Plant	7,200	1	7,200	8,700	62.6	47.0	15.6
ı			4 7 7 7 7			(100%)	(75%)	(25%)
1	Office	740	1 1 °	740	11,300	4.5	3.1	1.4
	Service	1,300	i	1,300	10,000	(100%) 13.0 (100%)	(70%) 7.8 (60%)	(30%) 5.2 (40%)
	Dormitory	2,750	2	4,500	10,000	45.0 (100%)	31.5 (70%)	13.5
	Others	11.53	-		-	3.7	3.7	- <u>-</u> ;
	Total	11,990	-	14,740	•	128.8	93.1	35.7

Remark: In the case of "Without the Project", there will be no investment.

(3) Infrastructural Construction Costs

(3) mirasirucii	irai Construction	Cosis	ひまい かいぶん よがだい	and the second second
Item	Quantity	Unit	Unit Price	Construction
			(Baht/m²)	Cost (Baht x 10 <sup>3</sup> )
Concrete Pavement	12,000	m	650/m <sup>2</sup>	7,800
Green Belt	14,400	m <sup>2</sup>	60/m <sup>2</sup>	864
Fence	980	m	250/m	245
Gate	1	1 set		245
Drainage	2,260	m	2,000/m	4,520
Catch Basin	40	piece	7,500/piece	300
Total				13,974 ≒
				14,000

### Remarks:

- (1) Depreciation life is 20 years.
- (2) 25% of the installation cost for infrastructure and equipment shown above will be reduced from taxable income for one year under special legal exemptions.

Reduction cost: Million Baht  $14.0 \times 25\%$  = Million Baht 3.5

(3) There will be no investment cost in the case of "Without the Project".

# (4) Construction Cost of Cold Storage

Total construction cost of new cold storage facility: Million Baht 18.6, consisting of panel (Million Baht 11.2) and equipment (Million Baht 7.4)

If the factory is relocated, half of the panel will be taken to the new location and the other half will be newly purchased.

### (5) Relocation Costs

1) Relocation cost of tuna can production line

The cost is estimated to be 15% of the construction cost.

- Construction cost of new production line: Million Baht 15.1
- Relocation cost: Million Baht 15.1 x 15% = Million Baht 2.3

Remark: 25% of the installation cost for infrastructure and equipment shown above will be reduced from taxable income for one year under special legal exemptions.

Reduction cost:

Million Baht 2.3 (relocation) x 20% (installation) x 25% = Million Baht 0.1

### 2) Relocation Cost of Cold Storage

Half of the insulation panel will be relocated and the other half will be newly purchased.

- The relocation cost is estimated to be 15% of the purchase cost. The breakdown is as follows: Packaging and transportation 9%, Withdrawal 3%, and Installation 3%

(Unit: Million Baht)

Item	Construc- tion Cost Removal Cost				Removal Cost		
		Purchase	Removal	Transport 9%	Withdrawal 3%	Install 3%	Total 15%
Panel	11.2 7.4	5.6	5.6 7.4	1.1 0.7	0.3	0.3	1.7
Equipment Total	18.6	5.6	13.0	0.7	0.5	0.2 0.5	2.8

Remark: 25% of the installation cost for infrastructure and equipment shown above will be reduced from taxable income for one year under special legal exemptions.

Reduction Cost: Million Baht 0.5 (Installation) x 25% = Million Baht 0.1

#### 3) Total Relocation Costs

Production line equipment:

Million Baht 2.3

New panel for cold storage:

Million Baht 5.6

Cold storage equipment:

Million Baht 2.8

Total:

Million Baht 10.7

## Repair and Maintenance Costs

The following rates will applied for the construction cost.

Building, utility, and infrastructure: 1% per year

Machinery and equipment: 3% per year

			(Ont. Minion Danc)
Item	Construction Cost	Rate (%)	Repair and Maintenance Costs
Building Utility Infrastructure	93.1 35.7 14.0	1 1	0.9 0.4 0.1
Production Line Equipment	15.1	3	0.5
Cold Storage Panel Equipment	11.2 7.4	3	0.3 0.2
Total	176.5		2.4

Remark: Repair and maintenance costs for both "With" and "Without" the Project are the same.

### (7) Depreciation Costs

- Residual depreciation life of relocated equipment is seven years and equipment will be renewed in the eighth year.
- The depreciation life of new equipment is 15 years and equipment will be renewed in the 16th year.
- The building, utilities, and infrastructure will not be renewed.

Item		Assets		Depreciation	
	New	Relocated	Total	Year	Cost
Building	93.1	0	93.1	20	4.7
Utility	35.7	0	35.7	20	1.9
Infrastructure	14.0	0	14.0	20	0.7
Production				1	
Line					
Equipment	0	15.1	15.1	15	1.0
Cold Storage					
Panel	5.6	5.6	11.2	15	0.8
Equipment	0	7.4	7.4	15	0.5
Furniture	3.9	0	3.9	20	0.2
Total	152.3	28.1	180.4		10.1

Remarks: The depreciation cost is 10.1 million Bahts every year from the first to the 20th year for both "With" and "Without" the Project.

- The residual value at the end of the 20th year is as follows:

# With the Project

2

Production machinery (relocation)	$15.1 - (1.0 \times 13) = 2.1$
Panel (renewal):	$5.6 - (0.4 \times 5) = 3.6$
Panel (relocation)	$5.6 - (0.4 \times 13) = 0.4$
Equipment (relocation)	$7.4 - (0.5 \times 13) = 0.9$
Total	Million Bahts 7.0
Without the Project	
Production machinery:	$15.1 - (1.0 \times 13) = 2.1$
Panel:	$11.2 - (0.8 \times 13) = 0.8$
Equipment	$7.4 - (0.5 \times 13) = 0.9$
Total:	Million Bahts 3.8

# (8) Administrative Expenses

Administrative expenses were estimated to be 4% of the sales amount, depending on the income statement of the fish processing companies registered in the Thailand stock market.

- (9) Investment Cost, Loan Interest, and Source of Funds
- The investment cost is shown in the table below.
- Loan conditions: 11% interest rate, 20 year period of repayment, including a five year grace period

Source of funds: Self-financing was assumed, since the land owned by the existing factory will be sold.

Amount of land and its value: 30 rai, Million Bahts 4.0/rai = Million Baht 120
Self-financing is 40% of the investment cost and corresponds to about 50% of the

existing land value.
A loan is 60% of the investment cost.

·			(Unit: Million Bahts	
<b>I</b> tem	Investment Cost	Source of Funds		
		Self-financing (40%)	Loan (60%)	
Building	93.1			
Utility	35.7		<u></u>	
Infrastructure	14.0			
Relocation			r	
Production Line	2.3			
Cold Storage	8.4		,	
Furniture	3.9		1 <u>2</u>	
Total	157.4	65.4	92.0	

# Appendix 6.2

1

Operational cost saved by reefers carrying skipjack and tuna from the Indian Ocean if the unloading port moves to Phuket from Bangkok.

### I. Conditions

### (1) Reefer

Capacity: 2,946 G.T.

Main Engine: 4,200 PS

No. of Crew Members: 22 persons

- 22 perso

Crew Salary/Wages: US\$31,183/month = US\$1,039.4/day = Bahts 26,298/day

1

Miscellaneous: US\$84,400/year = US\$234.4/day = Bahts 5,931/day

Fuel Consumption: 12,000 L/day

Fuel Cost: Baht 8.75/L at Phuket and Baht 5.00/L at Singapore

Cargo Load: 2,800 tons

Shipbuilding Cost: USMillion \$16.546 = Million Bahts 6.977/year

Depreciation Period: 20 years

# (2) Navigation Days

Seychelles---->BKK: 16 days/one way

Seychelles---->Phuket: 12 days/one way Phuket---->Singapore: 1.5 days/one way

Singapore--->BKK: 2.5 days/one way

Navigation day/trip to BKK including days required for loading and unloading:

 $16 \times 2 + 8 \times 2 = 48 \text{ days}$ 

### (3) Exchange Rate

US\$1.00 = Baht 25.3

### 2. Case 1

A reefer unloads and fuels his boat at Phuket.

(1) Fuel cost saved by eliminating the trip from Phuket to BKK.

12,000 L/day x 4 days x 2 = 96,000 liters

Current practice of refueling at Singapore

Cost sayed: Baht 5.0/L x 96,000 L = Baht 480,000 = US\$18,972.3

# (2) Cost of salary/wages saved

Salary/wages: US\$1,039.4/day x 4 days x 2 = US\$8,315.4

Miscellaneous: US\$234.4/day x 4 days x 2 = US\$1,875.5

Subtotal: US\$10,190.9

(3) Increased costs due to fueling at Phuket

Assuming that fuel for a one way trip is supplied at Phuket:

Fuel Consumption: 12,000 L/day x 12 days = 144,000 L

Increased Cost: (Baht 8.75 - Baht 5.0) /L x 144,000 L = Baht 540,000 = US\$21,343.8

(4) Depreciation costs

US\$16.546 million  $\div$  20 years  $\div$  365 days = US\$2,266.5/day

Cost Saved:  $US$2,266.5/day \times 4 days \times 2 = US$18,132.0$ 

(5) Repair and maintenance costs

 $US$275,800/year \div 365 days = US$755.6/day$ 

Cost Saved: US\$755.6/day x 4 days x 2 = US\$6,044.9

(6) Total costs saved

Fuel cost saved: -US\$18,972.3

Salary/wages & miscellaneous: -US\$10,190.9

Increased fuel cost: + US\$21,343.8

Repair and maintenance: -US\$6,044.9

Subtotal: - US\$13,864.3

Overhead (General Expenses) 15%: - US\$2,079.7

Depreciation: - US\$18,132.0

Total: - US\$34,076.0

Cost saved per ton of skipjack/tuna: - US\$34,0760 ÷ 2800 tons = - US\$12.2/ton

(7) Increased frequency of operations

Assuming that one month is required for docking and 48 days for a round trip, the frequency of operations will be seven times per year. However, the actual frequency of operations at present is five times per year due to dead time or waiting time. In this case, the average number of days for one trip will be 66 days/trip.

If a reefer unloads at Phuket, eight days will be saved off a round trip. Therefore, an average of 58 days will be required for a round trip.

Frequency of operations: 330 days  $\div$  58 days = 5.7 operations/year

An increased number of trips: 5.7 - 5.0 = 0.7 times

### 3. Case 2

A reefer unloads his catch at Phuket and fuels his boat in Singapore.

(1) Fuel costs saved from eliminating the trip to BKK from Singapore.

1,200 L/day x 2.5 days x 2 = 60,000 L

Costs saved: Baht  $5/L \times 60,000 L = Baht 300,000 = US$11,857.7$ 

(2) Salary/wage cost saved

Salary/wages: US\$1,039.4/day x 2.5 days x 2 = US\$5,197.2

Miscellaneous: US\$234.4/day x 2.5 days x 2 = US\$1,172.0

Subtotal: US\$6,369.2

(3) Depreciation costs

Saved costs:  $US$2,266.5/day \times 2.5 days \times 2 = US$11,332.5$ 

(4) Repair and maintenance costs

Costs Saved:  $US$755.6/day \times 2.5 days \times 2 = US$3,778.0$ 

(5) Total costs saved

Fuel costs saved: - US\$11,857.7

Salary/wages and miscellaneous: - US\$6,369.2

Repair and maintenance costs: - US\$\$3,778.0

Subtotal: - US\$22,004.9

Overhead (general expenses) 15%: - US\$3,300.7

Depreciation costs: - US\$11,332.5

Total: - US\$36,638.1

Cost saved per ton of skipjack/tuna = - US\$38,338 ÷ 2800 tons = - US\$13.1/ton

(6) Increased frequency of operations

One round trip requires 61 days.

Frequency of operations:  $330 \text{ days} \div 61 \text{ days} = 5.4 \text{ times/year}$ 

Increased number of trips: 5.4 - 5.0 = 0.4 times/year

### Reference

(1) Operation costs per day

Fuel: Baht  $5/L \times 12,000 \text{ L/day} = \text{Baht } 60,000 = \text{US}\$2,372/\text{day}$ 

Salary/wages: US\$1,039.4/day

Repair and maintenance: US\$755.6/day

Subtotal: US\$4167.0/day

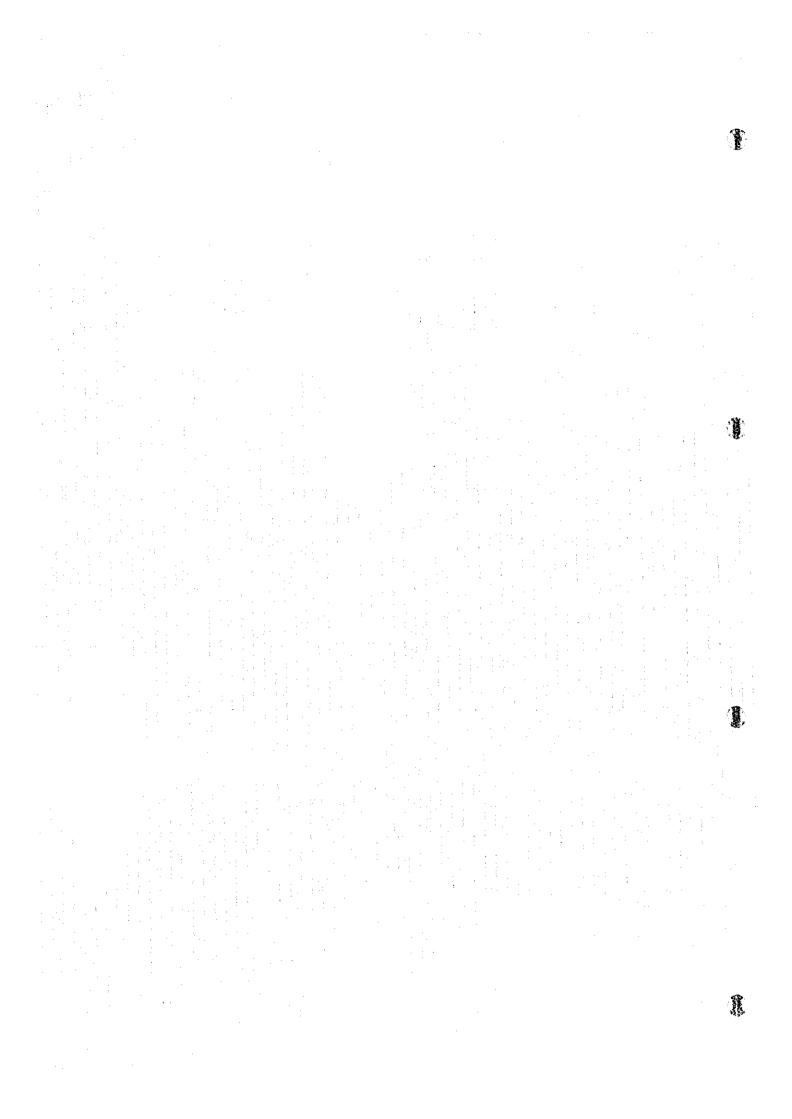
Overhead (general expenses) 15%: US\$625.1

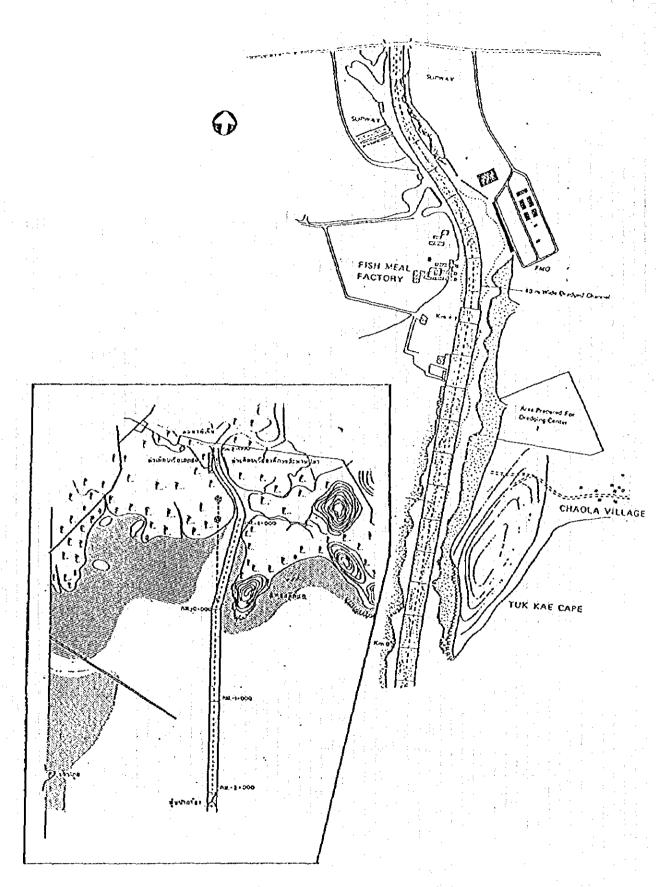
Depreciation: US\$2,266.5/day

Total: US\$7,058.6/day
(2) Cost of anchoring at the poit: US\$4330.8/day

Appendix 7.3 Layout of Approach Channels at Fishing Ports on the Andaman Sea Coast

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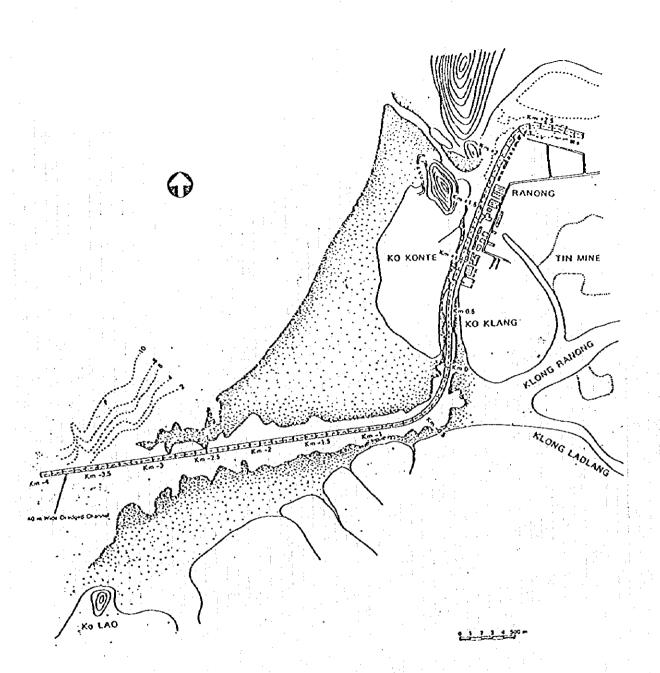




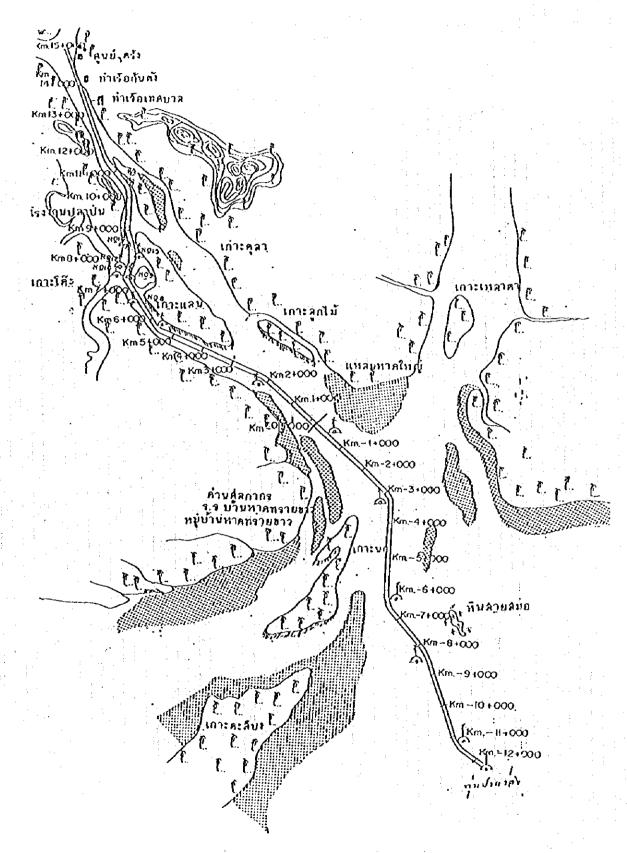
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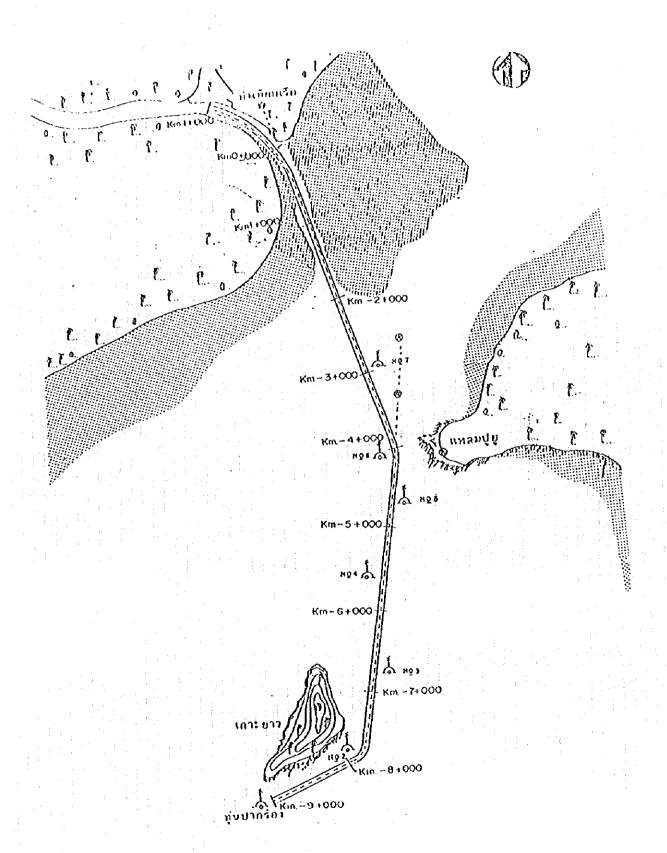
General Plan of Channel at Phuket



General Plan of Channel at Ranong



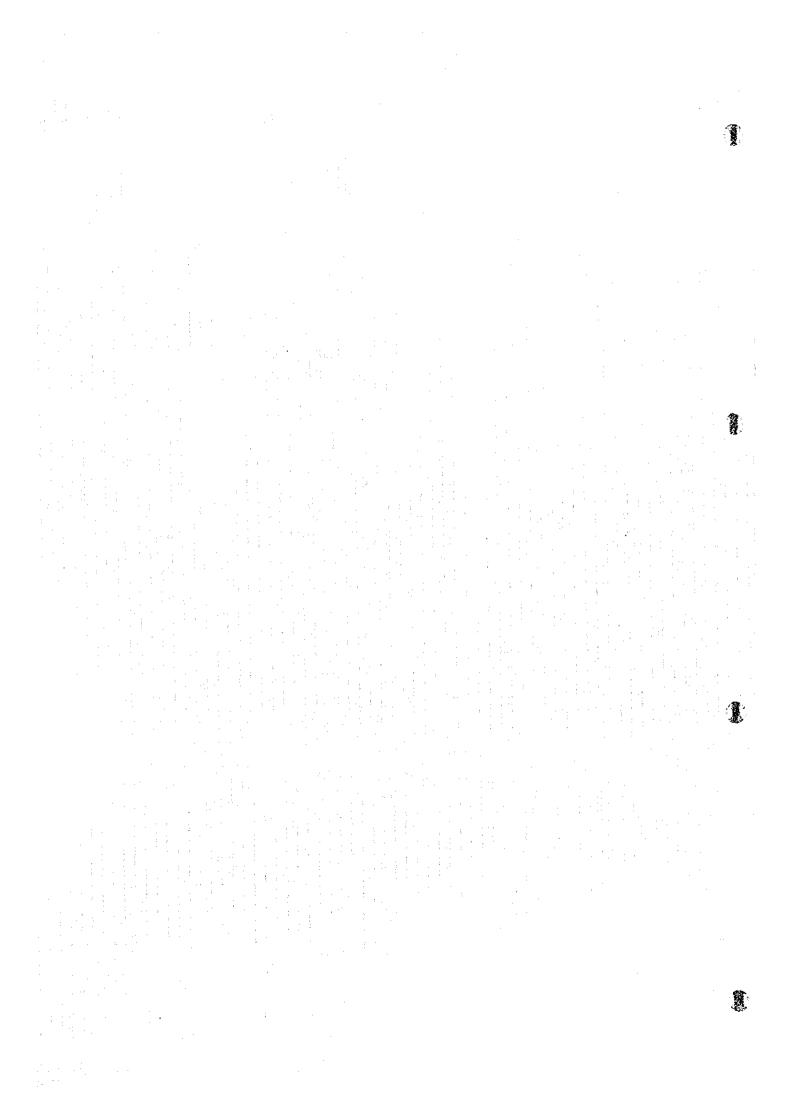
General Plan of Channel at Kanlang



General Plan of Channel at Satur

## Appendix 9.5.1 Construction Cost (Economic Prices)

1



Appendix 9.5.1 (7) Construction Cost of Processing Plants in Economic Price

			Control	Foreign		ľ	Con Postor			Comments	land						-			
Facilities			Seventant.	Portor	10.1	News	3		8777	_	Commence		8	_		5002			802	
		_	Proge	: :	:		Name of the	Seedled		Boomomo	Yeotor	i .		:	:	:				
	;	 : :			-	Ş	ğ	£	ě			•	. :	:	i					
				8		9660	5.60	- 6830	8500	-	-	iovoj	(4/4)	(dy	1901	(F/P)	ŝ	100	â	ŝ
Fig. Tura Carsony, Plants	-							-					l	ľ	r					
". 13(1) Plant buildow	Š	-	\$55,59	31,671	406.931	٠.		\$1,799	36,926	_		\$6.20	10,557	135.644	146.201	10.557	135.644	_	19,557	35.0
F-23(2) Administration building	3	-	20°	٥	57.06			6.474	6/87			19.022	0	1000	1900	٥	0000	•	ō	1900
2(3) Serves building	3	4	14.945	Ö	75,523	i		8,845	6.862			7.		25 1747	24.17	9	,		0	č
1-2V4) Domitory	5		148 SS1	ć	320,722	244.169	16.131	16.46.91	3.92	120,722	0.80	8 30	٥	106 901	8	Ó	100	106.903	c	90
Sum rotal			1 (00 857	1,00	242	١	1	103,6271	76,621			3 (3)	10.557	1	100,00	10,5571	1	1	10.687	ì
Detailed design and Engineering	-	-  -	43,515					-	-						-	-				
Overhead and Profe			55,00	:	:		:	; ;	1		-8		-			٠.		-		
Sub-load	-		(C) X	300.0	90,004					100.00	68.0	31.10	1.102	16,003	31,1041	1,102	\$6,003	100	1,162	8
i otal			P. 50	5.6.5	55.53					3	240	10,	959	7	1	059	3	100	1,650	, , , ;

Appendix 9.5.1 (1) Construction Cost for Basic Facilities of Fishing Port in Economic Price (Unit:000 Baht)

Item	Cost of	Foreign		13	Local Portion	E		Investment	-ig -3
	Investment	Portion	Total	Material		abour	Eqipment	Costs in	Conversion
	in Market	(E)			Skilled	Skilled Unskilled		Economic	Factor
	Priocs		:	(SCF)	(SCF)	(CFL)	(SCF)	Prices	-
		000.1	: :	0.956	0.956	0.583	0.956		-
Canding Wharf for Existing	83,750	40,200	38.510	18,014	4,004	4,883	11,610	78,710	0.88
Boats and Long Liners			j						
Lav-by Wharf	90,250	42,417	40,945	7,266	11,353	7,477	14,850	83,362	0.86
Deep-sca Wharf	111,563	78,094	28,080	3,513	13,928	6,122	4,517	106,174	0.84
Acces Trestie	113,750	45,500	61,167	28,023	15,894	6,376	10,875	106,667	0.00
Dredging	450,000	360,000	81,844	10,755	10,755	655'9	53,775	441,844	0.91
In-port Road	27,000	0	0 25,066	16,252	2,486	1,166	5,162	25,066	0.93
Bridge to City Road	3,375	0	3,191	151,2	179	55	807	3,191	0.95
Aids to Navigation	20,740	18,715	906:	0	0	97	1,860	20,621	0.94
Temporary Jetty	4,800	0	4,547	3,442	122	65	918	4 547	0.95
Mobilization/demorization	31,250	29,688	1,450	0	337	88	1,045	31,138	0.93
Total	936,478		614,614 286,706	89,416	59,056	32,816	105,418	901,320	
Detailed Design and Engineering	93,648	128'09	31,090	1,567	25,068	382	4,074	196'16	\$6.0
Investigation									
Contengency	83,916	48,932	31,114	9,594	6,539	3,643	11,338	80,046	0.89
Total	177,564		109,803 62,205	11,161	31,607	4,024	15,412	172,008	0.02
Crand Total	1,114,042	724,417	724,417 348,911	100.577	599 06	36.841	120,830	1.073.328	06.0

Appendix 9.5.1 (2) Construction Cost for Basic Facilities of Fishing Port in Economic Price

1

														(Unic 000 Baht)	abr.)
ltem	Cost of	Foreign	Local		2000			2001			2002			2003	
	Investment	Portion	Portion		- 4						:				
	in Market						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								
	prices	(F/P)	(J.P)	Total	(F/P)	S	Total	(F/P)	(J.P)	Total	(F/P)	ŝ	Total	(F/P)	Ę
Landing Wharf for Existing	78,710	40,200	38,510	78,710	40,200	38,510									
Boats and Long Liners	100000000000000000000000000000000000000		:					:							
Lay-by Wharf	83,362	42,417 40	40,945	25,008	12,725 - 12,283	12,283	58,353	29,62	28,661						
Deep-sea Wharf	106,174	78,094	28,080							31,872	23,443	8,429	74,302	159,45	19,61
Acces Trestle	106,667	45,500			-								106,667	45,500	61,167
Dredging	441,844	380,000	81,844				441,844	360,000	81.844				-		
In-port Road	25,066	0	25,066							25,066	٥	25,066		_	
Bridge to City Road	3,191	0					1,277	0	1277	1,915	0	1.915	     		
Aids to Navigation	20,621	18,715	98	,			20,621	18,715	1,906			-			
Temporary Jetty	4.547	0	4				4,547	0	4,547			_			
Mobilization/demorization	1321 18.	29,688	1450	15,569	14,844	725					-		15,569	14,844	725
Total	901,320	614,614 286	286,706	119,287	692.29	51,518	526,642	408,407	118,235	58,853	23,443	35,410	196,538	114,995	81.543 543
Detailed Design and Engineering Investigation						:									
Contengency										-					
Total	172,008	109,803 62	62,205	23,448	23,4481 12,107	11.341	98,4081	72,963	25,445	25,445 11,739;	4,1881	7,551	38,412	20,544	17.868
Grand Total	1,073 328	724.417 348	348,911	142,7351 79 876	928 64	65,829	625,050	481,370	143,680	143,680 70,592	27 631	42.961	234.9501	135,5391	99.411

Appendix 9.5.1 (3) Construction Cost for Functional Facilities of Fishing Port in Economic Price

The control		_		100	NO.	F	Const. Boston	5		-	Investment	Local						
Facilities   Physics   P		÷.	-	}		1			I						•			
School   Price   Pri	Facilities		-	Investment	Portion	TO E	Material	Labor			ni eleo	Conversion		1001			200	
Substituting   Subs			7	Price			:	۳	Crakelled		Есоновие	Feetor						
Secondary   Color				in Merket	6	:	8	S	ĵ	Ş	Proces							
Scores   Loc   1		_		Prives	1.000		0.056	9%60	0.583	0.056			Total		ar	Total	(E/P)	S
Story   Loc   1	F-1 Marketing Hall-Enlarging works	3	-	37,985	0	33,765	25,037	1,633	1961	3,112	33,765	68.0	33,765		33,765	_		
Scorney Last 11,638 2350 8,033 3,930 431 1,033 619 10,955 0,38 10,355 0,38 10,355 0,38 10,355 0,38 10,355 0,38 10,355 0,38 10,355 0,38 10,355 0,38 10,355 0,38 10,355 0,38 10,355 0,38 10,355 0,38 10,338 0,38 10,338 0,38 10,338 0,38 10,338 0,38 10,338 0,38 10,338 0,38 10,338 0,38 10,338 0,38 10,338 0,38 10,338 0,38 10,338 0,38 10,338 0,38 10,338 0,38 10,338 0,38 10,338 0,38 10,338 10,338 0,38 10,338	F.2 DOF Office	Š	_	13	16,560	6,375	4,413	3	8	98	22,935	98.0	22,935		6.375			
Storenge   Lot   1   122,004   73,779   36,717   16,877   3677   12,374   20,404   112,022   0.78   0.89   1.977   0.49   1.975   0.49	F-3 FWO Office	3		11,63%	2.530	8.033	\$ 930		1,053	619	10,363	88.0		2330	K,033	:		
Compared   Los   1,002   1,003   1,004   1,005   1,004   1,005   1,004   1,005   1,004   1,005   1,004   1,005   1,004   1,005   1,0	F-4 for Plant/Tes Storters	3		8	25.739	36.313	6.877	503	12.374	2000	112,052	87.0			· .	112.052	75.739	36,313
## Station	5-5 Lee Combar Tower	3	•-	1 002	0	28	657	4	107	Z	688	68'0				880	0	8
Los   10,337 8,947 1,581 991 144 333 99 10,528 0,244 1,975 0,899 1,977 0,890 1,977 0,890 1,977 0,890 1,977 0,890 1,977 0,890 1,977 0,890 1,977 0,890 1,977 0,890 1,977 0,890 1,977 0,890 1,978 0,890 1	F-6 Cold Storage	3		45.014	19,550	21.249	12,885	186	4,837	1,544	40,799	0.83				40,799	19,550	21,249
Columbia State   Loc   1	F-7 Workshop	3	-	10.837	4,947	1,581	8	4	25	8	10,328	18.0				10,529	233	1,58
Librard wice Librard Water Tank Lot 11 \$1,955 0 10,781 9,186 440 1,073 870 617 7,916 0,899  Cifrationent Librard Water Tank Lot 1 11,955 0 10,781 9,186 440 1,073 82 10,781 0,990  Librard Water Wickers  Librard Water Tank Lot 1 1,275 0 10,838 8,511 4,531 1,105 769 10,889  Cifrationent Librard Water Wickers  Lot 1 1,726 0 10,838 8,511 4,531 1,105 769 10,888 0,90  Lot 4 4,866 0 4,335 3,364 203 1,105 769 10,888 0,90  Lot 2 136 0 122 99 3 12 11 122 0,90 1,122 0,90  Lot 2 136 0 1,22 99 3 1,22 11 1,22 0,90 1,122 0,90  Lot 1 2,32 0 1,85 1,12 8 1,10 8	F-9 Electric Power Station	3		2.218	0	3	1,459	8	ភ	8	8	0.89		٥	Š			
Communication   Communicatio	On St. Rate Labord acte			:		. :		:			•							
The atoms of the for PMO)  Lot 1 11,999 0 10,781 9,186 440 11,073 82 10,771 0,990  Lot 1 2,705 0 2,499 1,764 116 233 242 2,499 0,899  The parameter Area 1,461 1,460 0 10,838 8,511 4,53 1,105 769 10,838 0,899  The parameter Area 1,461 1,460 0 10,838 8,511 4,53 1,105 769 10,838 0,899  The parameter Area 1,461 1,462 0 10,838 8,511 4,53 1,105 769 10,838 0,899  The parameter Area 1,461 1,462 0 10,838 8,511 4,53 1,105 769 10,838 0,899  The parameter Area 1,461 1,462 0 10,838 8,511 4,53 1,105 769 10,839 2,41 0,899  The parameter Area 1,461 1,462 0 1,839 1,462 1,105	5-10 City Water Reservoir/Elevated Wester Tenk	3	-	8.363	•	7916	6073	357	870	617	7,916	0.83				7,916	0	7,916
Column   C	(a.t.)						-				0							
Libraries (FOF FMO) Loc 1 1 2.705 0 2.409 1,754 116 223 24.2 2.409 0.89 Stories Loc 1 1 12.076 0 10.838 8.511 4.53 1,105 769 10.838 0.90  Constitution of the constraint of th	F-11 Wade Water Treatment	3	,-	1.995	•	10.781	981.6	3	1.073	23	10,781	06.0				10,781	٥	10,781
Storage   Lot   1   2,705   0   2,405   1,764   116   283   2,425   4,051   0,859   0,859   0,870	on St. Rest Island sate (for FMO)		-		_		-				-5							
Freedomment Area   Zel   1	E. P. Sichion Care Stormer	2	-	20%	č	607	276	911	282	300	2.405	0.89				2,405	a	2.40
toward/Shop         Lot         1         L2,076         0         10,838         8,511         433         1,105         769         10,838         0,500         4,335         0,50         4,335         0,50         4,335         0,50         4,335         0,50         4,335         0,50         4,335         0,50         4,335         0,50         4,335         0,50         4,335         0,50         4,335         0,50         4,335         0,50         4,335         0,50         4,335         0,50         2,331         0         0         2,431         0,50         2,431         0,50         2,431         0         0         0         0         1,22         0         0         0         0         0         0         1,22         0 <th< td=""><td>F-13-Fishing Gear Renaument Area</td><td>Š</td><td></td><td>4</td><td></td><td>Š</td><td>2002</td><td>8</td><td>£</td><td>Ş</td><td>4.00</td><td>0.89</td><td></td><td></td><td></td><td>4091</td><td>0</td><td>8</td></th<>	F-13-Fishing Gear Renaument Area	Š		4		Š	2002	8	£	Ş	4.00	0.89				4091	0	8
Column   C	Fold Fish Rox Morney Area	1							-		٥						_	
Lot   4   4,866   0   4,335   3,564   203   4996   2772   4,335   0,899   4,335   0   0   0   0   0   0   0   0   0	Tal & Contour Route and Park	2	-	320 CT	ć	10.838	X 511	153	1,105	769	10.838	0.00				10.838	0	10.838
Column   C	St. Charles 100	1	. 4	770		***	77.1	Ę	YOR	F	4 22	8		-	4 7 7 5		,	
December   Loc   1	The Company of the	{		8	•	}	۱ ۱	2				ì i		•	}			
Book         Lot         2         136         0         182         95         3         12         11         122         0.50         182         0           date for Monters         Lot         3         206         0         183         142         8         19         16         185         0.50         185         0           date for Wharf Worksens         Lot         1         353         0         254         241         11         28         15         256         0         296         0         0         256         0         200         256         0         250         0         250         0         256         0         256         0         256         0         256         0         256         0         256         0         256         0         256         0         256         15,454         368	F-17 Xubbah Disposal	3	-	<u>.</u>	6	2	<u>E</u>	=	R	*	7	0.89	,		242	•		
Second Reservation	F-18 Guard box	<u>.</u> š	(1	ž	0	ផ្ទ	8	*	27	=	<u>n</u>	8.0			អ			
daing for Wharf Workers         Lot         1         328         0         296         241         111         28         15         296         0.90         296         0           daing for Wharf Workers         Lot         1         3,643         0         4,499         3,403         206         503         384         4,499         0,89         0,89           usp House/Roserveir Teak         Lot         1         1,738         368         1216         833         771         45         176         85         1,584         0.87         1,584         368           Sup-Total         Lot         1         1,033         0         963         177         75         176         75         75         1544         368           Sup-Total         13,764         1,276         1,276         1,276         1,544         2,030           Sup-Total         18,772         1         1,584         2,013         1,764         2,030           Sup-Total         1,276         1,276         1,584         2,030           Sup-Total         1,276         1,584         2,030         1,541         1,584         2,030           Sup-Total         1,584	F-19 Jetty Watchman Box	3		98	6	185	7	20	5	2	183	8			183			
date for Wharf Workers         Lot 1         3,043         0         4,499         3,403         206         303         3184         4,499         0,89           usp House/Roserveir Teach         Lot 1         1,732         368         1,216         833         77         176         85         1,584         0.87         1,584         368           Sup-Total         1,003         0         963         77         17         9         655         0.89         15.418         368           Sup-Total         13,416         13,416         13,416         13,416         12,507         16,590         0.86         7,764         2,030           Sup-Total         18,782         12,907         16,590         0.86         7,764         2,030	F-20 Auction Watchman Box	3		33	0	ž	ጀ	Ξ	23	2	8	0.90			8			
University   Uni	F-21 Service Building for Wharf Workers	3	-	5,043	6	667	3,403	ž	8	384	4 499	0.89				4.490	0	4.49
Sub-Total   Les   1   1,093   20   9653   751   1,961   29,187   1,170   281,763   0.859   19,454     Sub-Total   13,722   13,722   1,907   16,500   1,207   1,000   1,200   1,200   1,000	F-22 Sea-water Pump House/Roservour Terk	3	<del>-</del>	1.732	368	1,216	28	£	176	\$	1,584	0.87			1,216			-
Sub-Total 308,569 123,694 158,069 105,755 11,961 29,183 11,70 28,175,19458 19,458 10,4	F-24 Truck Scale	3		1,083	ō	8	Ę	₹	1:0	2	*	0.89				\$	Ċ	\$
Sub-Took 15,706 12,907 12,907 16,500 11,007 16,500 0.86 7,764 2,030	1	_		308,5691	123,694	152,069	105,753	11.961	25,183	11,170	281,7631	0.86			56,541	205,765	104,236	101.5
Sub-Tour 12,007 12,007 16,500 1,12,007 12,007 1,105,00 0,86 2,000 1,105,00 0,86 2,000 1,105,0	Detailed design and Engineering		7	13,416	7		-					:				:		
SweTrout 15:907 15:907 15:909 1 1:000 0.86 2.00	Overhe and Profit	_		18.782		<u> </u>		<del>-</del>	<del>.</del>	:	12,907						:	
1887 C 18	1			32 198	1.907	16,590	-	1		1	16.590	0.86	7,764	2,030	5,733	21,734	10,877	10.857
	[470]		-	340.767	136.601	174,660	-	-		ľ	311,260	0.36	83,762	21,488	62,274	227.498	115,113	112,346

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Appendix 9.5.1 (4) Construction Cost for Functional Facilities of Fishing Port in Economic Price

External World Introduction		1000	L			ocal Portion		-	investment.	inoo.	i	,	-		: :	
:	:	5	The state of		Material	) Qq		Equip.	. S. S.	Convenion		200			8	
P actition	Č	Their Carlo Safes		Tota	!	<u> </u>	Unakilled		Economio	Pactor	-					
	, 	Prices	68		(§)	S S	0.583	(SC) 0.936	Prioes		Total	(4/4)	\$	Total	(£/P)	(a/D
1. External Works		12.00	1	63.773	67.317	3,107	7,580	7,768	65,773	0.89				65.773	<b>6</b> 6	65,773
1-1 Consider Stone Pavenent 1-2 Country Stone Pavenent	3	5.138	•	2	3,285	576	256	ĝ.	4,567	S. 6				ì		} 
1-3 Lead Adjuntment	<u>.</u>	-	0 0	o į	0 1	38,		1 959	16.587	:				16,587	•	16.5
14 Tree Planting	3.	are'e:	> <	0 1		925	1 2 8 2	1,314	n	0.80				51,11	•	11,123
1-5 Ram Water Drumage Disch/Catch Basin	5	1 1 2 2			0.7	8	1	ត	2,027					1,027	•	<u>۲</u>
1-6 Net Force and Onto	3.	1 .	_	7707		8	215	ឆ	1.868	0.89					•	
1-7 Street Lights	š .	679		15.06	125	908	2,112	1,73	13,963		15,965	•	15,965			
2. Main Line of Electroity and telephone	3 .	2345		712	628	**	8:	ផ្ល	212					ยเ		5 5 7 7
S. Mark Lune of City willer and the state of	3	2101		9.162	7.026	339	827	8			:				3	0.0
4. New Line of Orlunder	-	1.15.09	0	6 62	9, 248	6,1001	4,880	14,965	129,194	0.89	13.95	٦	283	113.2%		
Detailed design and Engineering		\$,307		,						1		· ·				
Ocade and Profit		8,832	2								١	-	100	340		~
Sale Sale	-	17,139	0 6	15,254			-		2				ľ	ľ		971 10
1.000	-	12.291	0	44.44%					144 448	0.89	1		100			
				֡				֡								

Appendix 9.5.1 (5) Construction Cost for Service Facilities of Industrial Estate in Economic Price

Water Reservoir /Water Treatment etc.												Comit	Came: 1000 party
		Cost of	Foreign		1	Local Portion			Investment	Local			
Facilities		Investment	Portion	Total	Material	Labor		Equip	Costin	Conversion		2003	
		Prices				Skilled	Unskilled	-	Economic				
	-				SCP		(CPC)	8	Prices				
	:		8		9560		0.583	0.956	_		Total	(F/P)	(J/P)
5.10 City Water Resemptificasies Water Tank   Lot	Ş	16.057	ō	14.341	1		1.578	1,117	14,341		14,341	0	14.34
F.11 Waste Water Treatment	.3	70,380	Ö	62,852	- /		6,926	4,071	62,852	0.89	62,852	0	62.85
E-26 Industrial Peters Office	ğ	6.403	6	5.732	ï	250	609	460	5,732		5,732	o	5.73
Sub-Total	-	92,840	0	82,925	1		9,1121	5,647!	82,9251	0.89	82,925	0	\$2.92
Detailed design and Engineering		4,037				1.7			7.7				
Overhead and Profit		159'5		· :		:	-						
Sub-Total	  -	8896	õ	8.622					8,622	68.0	8,622	Ö	8.62
7,460	-	XC2 COL	Ē	5			-		0 547	6% 0	C 22 10	Ċ	9 6

Appendix 9.5.1 (6) Construction Cost for Utility of Industrial Estate in Economic Price

External Work/Infrastructure		!			-								(Unit	(Unic 1000Baht)
	_	-	Cost of	Foreign		1	Local Portion			Investment	[800]		-:	]
			Investment	Portion		Material	Labor		Equip	Cost in	Convesion		50 50 50 50 50 50 50 50 50 50 50 50 50 5	
Facilities	5	È	in Market	9	Total		Skilled	Unskilled		Economic	Factor			
		,				(SCF)	(SCF)	9	(S)	25	:			
		-		1.000		0.956	0.956	0.583	0.956			Total	(F/P)	(S)
1. External Works	-		:			1								
1-1 Concrete Pavement	ğ		74.520	•	66,349	47,731	3,135	7,647	7,836	66,349	0.89	66,349		66,249
1-2 Crushed Stone Pavement	ĕ		728	0	\$	467	31	75	75	648	0.89	648	•	848
1-3 Land Adjustment	ទ្ទ	-	18,216	,	14,425	0	1,916	4,673	7.836	14,425	0.79	14,425	•	14,425
1-4 Tree Planting	Š		8,971	0	7,987	5,746	378	921	944		0.89	7.987	•	7867
1-5 Rain Water Drainage Ditch/Catch Basin	Š	-	24,351	0	21,681	15,597	1,024	2,499	2,561	•	÷	21,681		21,681
1-6 Net Fence and Gate	រុំ	-	2,783	0	2,478	1,783		286	293	2,478	0.89	2,478		2,478
1-7 Street Lights	ػ		672	0	598	430	8	\$	77			598	<u></u>	\$65
2. Main Line of Electricity and telephone	Š		43,125	0	38,010	26,798	2,061	5,028	4,123	38,010	0.88	38,010		38,010
3. Main Line of City Water and Sea Water	3		2,1	3	1,052	807	33	\$	111	1,052		1,052	0	1,052
4. Main Line of Drainage	3	1	6,305	0	\$,698	4,370	211	515	802	5,698	0.90	5,698	٥	5,698
Sub-Total	-		180.835	O	158,927	103.728	8,940	21,8061	24,454	158,927	0,88	158.927	0	158,927
Detailed design and Engineering		-	7,862			-					1.000			
Overhead and Profit			11,007											
Sub-Total	-	_	18,869	0	16,605	-		-		16,605	0.88	16,605	0	16,605
Total			199,704	0	175,532	1		ŀ		175,532	88.0	175,532	0	175,532
	l													

