

9. Economic Analysis

9.1. The Purpose of the Economic Analysis

The purpose of this analysis is to study and appraise the economic feasibility of the Short-term Development Plan for Phuket Fishery Complex in the target year (2007) from a viewpoint of national economy. The result of this study revealed that the conventional fishery methods by trawlers and purse seiner boats in the Andaman Sea coast, on which Phuket Fishing Port is located, should remain at the current level in view of future resource management, that new methods by longline, purse seine and pole-and-bait fishing should aim at more efficient use of resources, and that fishery products with higher added values for foreign countries such as Sashimi for Japanese market, canned tuna for the United States and rare skipjack roast for other markets should be developed and their export promoted, to thereby contribute to the economic development of Thailand. The short-term development plan aims at realization of these prospects.

The plan consists of constructing berthing facilities for the increasing number of tuna longline boats and for skipjack/tuna purse seiner boats and tuna freezer/carriers at Phuket Fishing Port, and building a fishery processing zone for tuna canning behind the port.

The purpose of this chapter is to investigate economic benefits and costs that will arise from this project and to evaluate whether the net benefits will exceed those that could be obtained from other opportunity costs in Thailand.

9.2. Methodology of Economic Analysis

An economic internal rate of return (EIRR) based on a cost-benefit analysis is used to appraise feasibility of this project by comparing the case with the project and without the project implementation. In estimating the project costs and benefits, they should be fixed quantitatively as much as possible. For economic analysis, prices are expressed in economic prices based on the border price concept. Market prices of material, equipment and labor should be converted into border prices (economic price) after removal of transfer items such as taxes and subsidies.

9.3. Benefits of the Project

“With the project” in the target year(2007), the following number of fishing boats by new fishery method will unload fishes on the expanded and constructed berthing facilities at Phuket Fishing Port as well as trawler, purse seiner and tuna longliner by the conventional fishery methods;

- Tuna longline boats: Thai boats 70, foreign boats 105,
- Skipjack/tuna purse seiner boats: Thai boat 1, foreign boats 2,
- Tuna freezer/carriers: foreign boats 15 (total boats call)

Benefits accrued from the project and calculated quantitatively are as follows;

- a) Increased Operation Profits by Increase of Fish Catch: increase of operation profits by Thai tuna longline boat.

- b) Increased Foreign Currency Earnings by Increase of Export: Export of fresh tuna for Sashimi to Japan and export of canned tuna to the United States after unloaded by Thai tuna longline boats.
- c) Savings of Foreign Currency by Self-sufficient Supplying of Materials and Decrease in Materials;
 Thai tuna longline boats and Thai skipjack/tuna purse seiner boat will supply materials self-sufficiently and foreign tuna longline boats, skipjack/tuna purse seiner boats and tuna freezer/carriers will supply more cheaper materials than present price.
- d) Increase of Foreign Currency Earnings by FMO Commission Charged to Foreign Boats' Sales Amount of Unloaded Fishes; FMO will get the commission charges of 1% based on the new tariff.
- e) Reduction of Transportation Costs; Reduction of material transportation cost of canned tuna "{With}" the project comparing "{Without}" project.
- f) Increase of Land; "{With}" the project, there will be reclaimed land for Phuket Fisheries Processing Zone.

The total amount of above Benefits of item 1) to item 5) is shown in Table 9.3.1.

In respect to the estimation of unloaded fish volume and number of fishing boats at Phuket Fishing Port, both cases of "with project" and "without project" are shown in Table 9.3.2 and Table 9.3.3 respectively.

9.4. Project Costs

Investment costs and incremental operation costs with the project are shown in Tables 9.4.1 and 9.4.2 respectively.

9.5. Results of Cost-Benefit Analysis

The economic internal rate of return (EIRR) based on the cost/benefit analysis was 12.02% shown in Table 9.5.1. In order to determine whether or not the project is feasible when certain conditions change, a sensitivity analysis was conducted for the following three alternatives.

Case A: Cost increase by 10% EIRR 10.25%

Case B: Benefit increase by 10% EIRR 13.38%

Case C: Cost increase by 10% and benefit Increase 10% EIRR 9.39

9.6. Evaluation

In general, the opportunity costs of capital is considered to range between 8% and 12% according to the degree of development in each country. It is generally considered that with an EIRR of more than 10% infrastructure or social service projects are economically feasible.

For this project, the economic calculation took into account only the items which are easily quantified. EIRR exceeded 10% and even in the case A where EIRR at 9.4%.

It is therefore determined that this short-term development plan is feasible from the viewpoint of the national economy.

Table 9.3.1 Total Benefit

(Unit : 1,000 Baht)

Year	Total	Increase of export	Decrease of raw material	Commission against sales price	Increase of operation profit	Saving of transportation cost	Increase of Land
2000	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0
2002	79,977	44,876	0	24,777	10,324	0	0
2003	85,219	48,466	0	25,603	11,150	0	0
2004	167,318	62,465	0	26,429	78,424	0	0
2005	287,326	80,129	2,508	31,433	154,644	12,884	5,728
2006	417,927	85,295	97,627	43,126	164,621	15,801	11,457
2007	461,518	90,462	105,547	54,819	174,598	18,907	17,185
▼							
2031	461,518	90,462	105,547	54,819	174,598	18,907	17,185

Table 9.3.1(1) Estimation of unloaded fish volume and numbers of fishing boats at Phuket fishing port for 1996 to 2031 (with project)

Unit	FMO										Private sector			Phuket fishing port		Phuket		Grand Total
	Trawler (Thailand)	Purse seiner (Thailand)	Tuna longline (Thailand)	Tuna longline (Japan)	Tuna carrier vessel (Thailand)	Sub total	Trawler (Thailand)	Purse seiner (Thailand)	Tuna longline (Thailand)	Tuna carrier vessel (Thailand)	Sub total	Port Total	Commercial port (Thailand)	Commercial port (Japan)	Shippack tuna (Thailand)	Shippack tuna (Japan)		
1. 1996																		
Numbers of fishing boats	77	32	0	0	0	109	95	42	0	137	246	0	0	0	0	0	2	248
Unloaded volume per boat	14	6	0	0	0	0	14	6	0	0	0	0	0	0	0	0	830	0
Number of trips	10	86	0	0	0	0	10	86	0	0	0	0	0	0	0	0	6	0
Unloaded volume per year	10,780	16,512	0	0	0	27,292	13,300	21,672	0	34,972	62,264	0	0	0	0	0	9,960	9,960
Consumer fish	10,780	16,512	0	0	0	27,292	13,300	21,672	0	34,972	62,264	0	0	0	0	0	9,960	9,960
Trash fish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of boat's call	770	2,752	0	0	0	3,522	950	3,612	0	4,562	8,084	0	0	0	0	0	12	12
2. 2002																		
Numbers of fishing boats	77	32	80	50	0	239	95	42	70	207	446	1	1	1	1	1	2	3
Unloaded volume per boat	14	6	7	5	0	0	14	6	7	7	0	480	480	480	480	480	830	0
Number of trips	10	86	19	19	0	0	10	86	19	19	0	0	0	0	0	0	6	6
Unloaded volume per year	10,780	16,512	10,640	4,750	0	42,682	13,300	21,672	9,310	44,282	86,964	0	0	0	0	0	9,960	9,960
Consumer fish	10,780	16,512	10,640	4,750	0	42,682	13,300	21,672	9,310	44,282	86,964	0	0	0	0	0	9,960	9,960
Trash fish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of boat's call	770	2,752	1,520	950	0	5,992	950	3,612	1,330	5,892	11,884	6	6	6	6	6	12	18
2. 003																		
Numbers of fishing boats	77	32	85	54	0	248	95	42	70	207	455	1	1	1	1	1	2	3
Unloaded volume per boat	14	6	7	5	0	0	14	6	7	7	0	480	480	480	480	480	830	0
Number of trips	10	86	19	19	0	0	10	86	19	19	0	0	0	0	0	0	6	6
Unloaded volume per year	10,780	16,512	11,305	5,130	0	43,727	13,300	21,672	9,310	44,282	88,009	0	0	0	0	0	9,960	9,960
Consumer fish	10,780	16,512	11,305	5,130	0	43,727	13,300	21,672	9,310	44,282	88,009	0	0	0	0	0	9,960	9,960
Trash fish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of boat's call	770	2,752	1,615	1,025	0	6,163	950	3,612	1,330	5,892	12,055	6	6	6	6	6	12	18
2. 004																		
Numbers of fishing boats	77	32	90	58	0	257	95	42	70	207	464	1	1	1	1	1	2	3
Unloaded volume per boat	14	6	7	5	0	0	14	6	7	7	0	480	480	480	480	480	830	0
Number of trips	10	86	19	19	0	0	10	86	19	19	0	0	0	0	0	0	6	6
Unloaded volume per year	10,780	16,512	11,970	6,612	0	45,874	13,300	21,672	9,310	44,282	90,156	0	0	0	0	0	9,960	9,960
Consumer fish	10,780	16,512	11,970	6,612	0	45,874	13,300	21,672	9,310	44,282	90,156	0	0	0	0	0	9,960	9,960
Trash fish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of boat's call	770	2,752	1,710	1,102	0	6,334	950	3,612	1,330	5,892	12,226	6	6	6	6	6	12	18

1. Unloaded fish volume by tuna longline boat.
 2. Unloaded fish volume by shippack / tuna purse seiner.
 3. Unloaded fish volume by tuna carrier vessel.
 4. Raw material of tuna necessary tuna can.
 50% (frozen) tuna exported to Japan, 40% raw material for tuna can exported to U.S.A.
 100% raw material for tuna can exported to U.S.A.
 100% raw material for tuna can exported to U.S.A.
 2005 call factory 2 company - 24,000; 2006 company - 48,000;
 2007 6 company - 72,000

Table 9.3.1(2) Estimation of unloaded fish volume and numbers of fishing boats at Phuket fishing port for 1996 to 2031 (with project)

Unit	FMO														Phuket fishing boat			Phuket commercial boat			Total	Grand total
	Trawler (Thailand)				Tuna carrier (Foreign)				Private sector						Phuket fishing boat			Phuket commercial boat				
	Trawler (Thailand)	Purse seiner (Thailand)	Tuna longline (Foreign)	Tuna longline (Thailand)	Skimpack tuna purse seiner (Foreign)	Skimpack tuna purse seiner (Thailand)	Tuna carrier (Foreign)	Sub total	Trawler (Thailand)	Purse seiner (Thailand)	Tuna longline (Foreign)	Tuna longline (Thailand)	Skimpack tuna purse seiner (Foreign)	Skimpack tuna purse seiner (Thailand)	Total	Skimpack tuna purse seiner (Thailand)	Skimpack tuna purse seiner (Foreign)	Total				
2,005																						
Numbers of fishing boats	71	32	95	62	1	2	0	269	95	42	70	207	476	0	0	0	0	0	476			
Unloaded volume per boat	14	6	7	480	830	0	0	14	14	8	7	0	0	0	0	0	0	0	0			
Number of trips	10	86	19	19	6	5.5	0	0	10	86	19	0	0	0	0	0	0	0	0			
Unloaded volume per year	10,780	16,512	12,635	8,246	2,880	9,044	0	60,097	13,300	21,672	9,310	44,282	104,379	0	0	0	0	0	104,379			
Consumer fish	10,780	16,512	12,635	8,246	2,880	9,044	0	60,097	13,300	21,672	9,310	44,282	104,379	0	0	0	0	0	104,379			
Trash fish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Number of boat's call	770	2,752	1,995	1,178	6	11	0	6,522	950	3,612	1,330	5,892	12,414	0	0	0	0	0	12,414			
2,007																						
Numbers of fishing boats	71	32	165	70	1	2	4	291	95	42	70	207	498	0	0	0	0	0	498			
Unloaded volume per boat	14	6	7	480	830	1,500	0	14	14	6	7	0	0	0	0	0	0	0	0			
Number of trips	10	86	19	19	6	8	0	0	10	86	19	0	0	0	0	0	0	0	0			
Unloaded volume per year	10,780	16,512	13,965	9,310	2,880	9,960	46,126	109,533	13,300	21,672	9,310	44,282	153,815	0	0	0	0	0	153,815			
Consumer fish	10,780	16,512	13,965	9,310	2,880	9,960	46,126	109,533	13,300	21,672	9,310	44,282	153,815	0	0	0	0	0	153,815			
Trash fish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Number of boat's call	770	2,752	1,995	1,330	6	12	31	6,896	950	3,612	1,330	5,892	12,788	0	0	0	0	0	12,788			
2,031																						
Numbers of fishing boats	71	32	105	70	1	2	4	291	95	42	70	207	498	0	0	0	0	0	498			
Unloaded volume per boat	14	6	7	480	830	1,500	0	14	14	6	7	0	0	0	0	0	0	0	0			
Number of trips	10	86	19	19	6	6	0	0	10	86	19	0	0	0	0	0	0	0	0			
Unloaded volume per year	10,780	16,512	13,965	9,310	2,880	9,960	46,126	109,533	13,300	21,672	9,310	44,282	153,815	0	0	0	0	0	153,815			
Consumer fish	10,780	16,512	13,965	9,310	2,880	9,960	46,126	109,533	13,300	21,672	9,310	44,282	153,815	0	0	0	0	0	153,815			
Trash fish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Number of boat's call	770	2,752	1,995	1,330	6	12	31	6,896	950	3,612	1,330	5,892	12,788	0	0	0	0	0	12,788			

(Remarks)
 1. Unloaded fish volume by tuna longline boat
 2. Unloaded fish volume by skipjack / tuna purse seiner
 3. Unloaded fish volume by tuna carrier vessel
 4. Raw material of tuna necessary tuna can
 60% fresh frozen tuna exported to Japan, 40% raw material for tuna can exported to U.S.A.
 100% raw material for tuna can exported to U.S.A.
 100% raw material for tuna can exported to U.S.A.
 2005 fish factory 2 company = 24,000, 2006 4 company = 41,000,
 2007 6 company = 72,000

Table 9.3.2(1) Estimation of unloaded fish volume and numbers of fishing boats at Phuket fishing port for 1996 to 2031 (without project)

	Unit	FMO		Private sector		Sub total		Total		Phuket port		Bangkok port etc.		Grand total
		Trawler (Thailand)	Purse seiner (Thailand)	Trawler (Thailand)	Purse seiner (Thailand)	Tuna longline (Foreign)	Sub total	Total	Skippack,tuna purse seiner (Thailand)	Skippack,tuna purse seiner (Foreign)	Tuna carrier vessels (Foreign)	Total		
1996														
Numbers of fishing boats	boat	77	32	109	35	42	0	137	245	0	2	0	2	248
Unloaded volume per boat	t	14	6		14	6	0			0	830	0		
Number of trips	trip	10	86		10	86	0			0	6	0		
Unloaded volume per year	t	10,780	16,512	27,292	13,300	21,672	0	34,972	62,264	0	9,960	0	9,960	72,224
Consumer fish	t	10,780	16,512	27,292	13,300	21,672	0	34,972	62,264	0	9,960	0	9,960	72,224
Trash fish	t	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of boat's call	boat	770	2,752	3,522	950	3,612	0	4,562	8,084	0	12	0	12	8,096
2002														
Numbers of fishing boats	boat	77	32	109	95	42	70	207	316	1	2	0	3	319
Unloaded volume per boat	t	14	6		14	6	7			480	830	0		
Number of trips	trip	10	86		10	86	13			6	6	0		
Unloaded volume per year	t	10,780	16,512	27,292	13,300	21,672	9,310	44,282	71,574	2,880	9,960	0	12,840	84,414
Consumer fish	t	10,780	16,512	27,292	13,300	21,672	9,310	44,282	71,574	2,880	9,960	0	12,840	84,414
Trash fish	t	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of boat's call	boat	770	2,752	3,522	950	3,612	1,330	4,562	8,084	6	12	0	18	8,102
2003														
Numbers of fishing boats	boat													
Unloaded volume per boat	t													
Number of trips	trip													
Unloaded volume per year	t													
Consumer fish	t													
Trash fish	t													
Number of boat's call	boat													
2004														
Numbers of fishing boats	boat													
Unloaded volume per boat	t													
Number of trips	trip													
Unloaded volume per year	t													
Consumer fish	t													
Trash fish	t													
Number of boat's call	boat													

(Remarks)
 1. Unloaded by foreign tuna longline boat will be done on private facilities only. 60% : Sathimi (fresh and frozen tuna) exported to Japan 40% : Raw material for tuna can exported to U.S.A.
 2. Unloaded by skipjack / tuna purse seiner will be done as follows Thailand's ship at Phuket port and Foreign's ship at Songkhla.
 3. Unloading by tuna carrier vessels will be done on Songkhla and Bangkok port. 100% : Raw material for tuna can exported to U.S.A.

Table 9.3.2(2) Estimation of unloaded fish volume and numbers of fishing boats at Phuket fishing port for 1996 to 2031 (without project)

	Unit	FMO		Private sector			Phuket port		Bangkok port etc.		Grand total	
		Trawler (Thailand)	Purse seiner (Thailand)	Sub total	Trawler (Thailand)	Purse seiner (Thailand)	Longline (Foreign)	Sub total	Phuket port Skipjack,tuna purse seiner (Foreign)	Bangkok port etc. Tuna carrier vessels (Foreign)		Total
2005												
Numbers of fishing boats	boat	77	32	109	95	42	70	207	316	2	4	320
Unloaded volume per boat	t	14	6		14	6	7		480	830	1,500	
Number of trips	trip	10	86		10	86	19		6	6	5	
Unloaded volume per year	t	10,780	16,512	27,292	13,300	21,672	9,310	44,282	71,574	9,796	7,436	20,112
Consumer fish	t	10,780	16,512	27,292	13,300	21,672	9,310	44,282	59,718	9,796	7,436	20,112
Trash fish	t	0	0	0	0	0	0	0	11,856	0	0	11,856
Number of boat's call	boat	770	2,752	3,522	950	3,612	1,330	4,562	8,084	12	5	8,107
2006												
Numbers of fishing boats	boat								316	2	3	322
Unloaded volume per boat	t								480	830	1,500	
Number of trips	trip								6	6	7.0	
Unloaded volume per year	t								71,574	9,960	31,436	44,276
Consumer fish	t								59,718	9,960	31,436	44,276
Trash fish	t								11,856	0	0	11,856
Number of boat's call	boat								8,084	6	21	39
2007												
Numbers of fishing boats	boat								316		5	322
Unloaded volume per boat	t										1,500	
Number of trips	trip										7.4	
Unloaded volume per year	t								71,574		55,436	127,010
Consumer fish	t								59,718		55,436	115,154
Trash fish	t								11,856		0	11,856
Number of boat's call	boat								8,084		37	8,121
2031												
Numbers of fishing boats	boat	77	32	109	95	42	70	207	316	2	5	324
Unloaded volume per boat	t	14	6		14	6	7		480	830	1,500	
Number of trips	trip	10	86		10	86	19		6	6	7.4	
Unloaded volume per year	t	10,780	16,512	27,292	13,300	21,672	9,310	44,282	71,574	9,960	55,436	83,276
Consumer fish	t	10,780	16,512	27,292	13,300	21,672	9,310	44,282	59,718	9,960	55,436	83,276
Trash fish	t	0	0	0	0	0	0	0	11,856	0	0	11,856
Number of boat's call	boat	770	2,752	3,522	950	3,612	1,330	5,392	8,084	12.0	37	8,139

1. Unloaded by foreign tuna longline boat will be done on private facilities only. 60% Sashimi (fresh and frozen tuna) exported to Japan 40% Raw material for tuna can exported to U.S.A.

2. Unloaded by skipjack / tuna purse seiner will be done as follows: Thailand's ship at Phuket port and Foreign's ship at Songkhla.

3. Unloading by tuna carrier vessel will be done on Songkhla and Bangkok port. 100% Raw material for tuna can exported to U.S.A.

Table 9.4.1 Investment Cost

(Unit : 1000 Baht)

Year	Market price Investment cost	Economic price 0.953
2000	126,450	121,771
2001	887,008	854,189
2002	176,113	169,597
2003	579,008	557,585
2004	363,926	350,461
2005	363,926	350,461
2006	363,926	350,461
Total	2,860,357	2,754,524

Table 9.4.2 Operation Cost

(Unit : 1,000Baht)

Year	Total	Labor cost	Administratio n cost	Repair & maintenance cost	Maintenance dredging cost	Maneuvering by tug boat
2001	1,952	825	413	714	0	0
2002	35,098	2,974	1,487	4,347	26,290	0
2003	37,221	2,974	1,487	6,470	26,290	0
2004	38,396	2,974	1,487	7,645	26,290	0
2005	43,514	4,374	2,187	10,663	26,290	0
2006	43,743	4,374	2,187	10,663	26,290	229
2007	60,912	4,374	2,187	27,587	26,290	474
▼						
2031	60,912	4,374	2,187	27,587	26,290	474

Table 9.5.1 Cost / Benefit Analysis and Economic Internal Rate of Return (EIRR) (Economic price)

EIRR = 12.02%

(Unit: 1000Baht)

No	Year	Cost			Benefit	Net benefit	Present value (Discount rate = 12.02%)		Present value (Discount rate = 13%)		Present value (Discount rate = 14%)	
		Total	Construction cost	Operation cost			Residual value	Present value	Residual value	Present value	Residual value	Present value
0	2000	142,735	142,735	0	0	-142,735	1,000,000	-142,735	1,000,000	-142,735	1,000,000	
1	2001	904,165	904,213	1,952	0	-904,165	0.892678	-807,128	0.889456	-793,127	0.877193	
2	2002	459,768	424,670	35,098	0	-459,768	0.796874	-297,632	0.783147	-297,632	0.769488	
3	2003	363,718	326,497	37,221	0	-363,718	0.711351	-198,111	0.693050	-187,979	0.674292	
4	2004	356,805	328,409	28,396	0	-356,805	0.635008	-122,749	0.613319	-118,172	0.592080	
5	2005	371,973	328,409	43,514	0	-371,973	0.566857	-47,954	0.542780	-43,937	0.519369	
6	2006	272,152	328,409	43,743	0	-272,152	0.506021	23,163	0.480319	20,854	0.455557	
7	2007	60,912	0	60,912	0	60,912	0.451714	180,859	0.425061	160,097	0.399637	
8	2008	60,912	0	60,912	0	60,912	0.403235	161,538	0.376150	149,435	0.350559	
9	2009	60,912	0	60,912	0	60,912	0.359489	144,702	0.332885	123,190	0.307508	
10	2010	60,912	0	60,912	0	60,912	0.321327	128,726	0.294588	108,061	0.269744	
11	2011	60,912	0	60,912	0	60,912	0.286842	114,911	0.260688	94,790	0.236617	
12	2012	60,912	0	60,912	0	60,912	0.256057	102,578	0.230706	82,149	0.207559	
13	2013	60,912	0	60,912	0	60,912	0.228577	91,569	0.204165	72,928	0.182069	
14	2014	60,912	0	60,912	0	60,912	0.204045	81,742	0.180677	65,931	0.159710	
15	2015	60,912	0	60,912	0	60,912	0.182147	72,969	0.159891	58,123	0.140096	
16	2016	60,912	0	60,912	0	60,912	0.162598	65,138	0.141496	49,231	0.127892	
17	2017	60,912	0	60,912	0	60,912	0.145148	58,142	0.125218	43,185	0.107800	
18	2018	60,912	0	60,912	0	60,912	0.129570	51,907	0.110812	37,882	0.094561	
19	2019	60,912	0	60,912	0	60,912	0.115664	46,326	0.098064	32,229	0.082948	
20	2020	60,912	0	60,912	0	60,912	0.103251	41,363	0.086782	28,149	0.072762	
21	2021	60,912	0	60,912	0	60,912	0.092170	36,924	0.076795	25,669	0.063326	
22	2022	60,912	0	60,912	0	60,912	0.082278	32,981	0.067963	22,429	0.055988	
23	2023	60,912	0	60,912	0	60,912	0.073448	29,424	0.060144	19,675	0.049112	
24	2024	60,912	0	60,912	0	60,912	0.065565	26,266	0.052251	17,259	0.043081	
25	2025	60,912	0	60,912	0	60,912	0.058529	23,447	0.047102	15,139	0.037790	
26	2026	60,912	0	60,912	0	60,912	0.052247	20,930	0.041683	13,280	0.033149	
27	2027	60,912	0	60,912	0	60,912	0.046640	18,884	0.036888	11,649	0.029078	
28	2028	60,912	0	60,912	0	60,912	0.041624	16,629	0.032644	10,218	0.025507	
29	2029	60,912	0	60,912	0	60,912	0.037166	14,889	0.028889	8,964	0.022378	
30	2030	60,912	0	60,912	0	60,912	0.033177	13,291	0.025565	7,863	0.019627	
31	2031	-433,472	0	60,912	0	-433,472	0.029617	26,307	0.022624	15,409	0.017217	
Total		4,009,682	2,781,342	1,720,772	0	-494,384	12,575,777	8,566,025	-157,998	-994,378		

10. Financial Evaluation

10.1. Purpose of the Financial Analysis

The purpose of this analysis is to study and appraise the financial feasibility of the Short-term Development Plan for Phuket Fishery Complex in the target year (2007) concerning both aspects of the profitability of the project itself with the investment and the financial soundness of the execution agency after the investment from the viewpoint of management position of the execution agency.

The contents of the plan are stated in the economic analysis of preceding chapter and the construction of the project will start from the year of 2000 and complete in 2006. During the periods, in respect to the Phuket Fishing Port, berthing facilities for tuna longline boats will operate from 2002 and also berthing facilities for skipjack/tuna purse seiner boats will operate from 2005. Furthermore, Phuket fisheries processing zone will operate from 2005. Consequently, 2 companies of tuna canning will operate in 2005, 4 companies in 2006 and 6 companies in 2007. This analysis is studied on the assumption that the fishing port will be managed by FMO and the fisheries processing zone will be managed by joint system of FMO and IEAT(Industrial Estate Authority of Thailand) to be established newly.

10.2. Methodology of Financial Analysis

10.2.1. Cost-Benefit Analysis

The profitability of the project itself with the investment is analysed using the financial rate of return (FIRR) by means of a cost-benefit analysis similar to the economic analysis.

The benefits consist of operation revenues and residual value of the fixed assets in the last year of the project life with the investment. The costs consist of the investment costs and operation costs excluding depreciation costs of the investment and interest of long-term.

It is generally considered that with an FIRR of more than interest rate of the funds for the investment is financially feasible.

10.2.2. Analysis of Financial Statements

With the project, the financial soundness of the execution agency is appraised based on its projected financial statements(income statement, cash flow statement and balance sheet).

The appraisal is made from the viewpoint of profitability, loan repayment capacity and operational efficiency, using authorised ratio.

10.3. Term of calculation for Financial Analysis

The term of the cost-benefit analysis is from the year of 2002 to 2031 and the term of the analysis of financial statement is from 1996 to 2031.

10.4. Fund Raising for the Investment

The local portion of the investment cost is assumed to be raised by self-finance of the execution agency or the government fund. The foreign portion is assumed to be raised by foreign loan and borrowing conditions is as follows.

Loan period: 25 years, Grace period: 5 years, Interest rate: 10.10%

10.5. Fixed Assets

The fixed assets consist of existing assets and new assets after the investment. The annual depreciation costs of these assets are calculated by the straight line method on their depreciation lives. Residual values after depreciation are estimated as zero. Depreciation life is as follows based on the rule of FMO.

Building and structure: 40 years, Vehicle: 15 years, Equipment: 10 years

10.6. Revenues

10.6.1. Phuket Fishing Port

The revenues of the fishing port is calculated based on the present tariff of 1996. With the project, FMO have a concept of integrating both fishery activities of FMO itself and the private sector in the fishing port under the control and management of FMO in order to realise efficient and sound management. Then, a revised or new tariff for unloaded charges and berthing charges taking account of the present tariff of FMO and Phuket Port will be applied to tuna long line boats, skipjack/tuna purse seiners and tuna freezer/carriers using extended or newly constructed facilities of FMO. Also, unloading charges and berthing charges of present tariff will be applied to trawlers and purse seiners and tuna long line boats using private facilities. FMO will weigh fish volume unloaded by trawlers and purse seine boats using private facilities. FMO has an act of organizing the fish marketing activities established in 1952 providing that FMO can collect a commission of service charge by at rate of 3% against the sales prices of unloaded fishes from agents. This act has not been enforced until now. With the project, it is necessary for FMO to raise fund for a great amount of investment costs. According to Economic Analysis studied in the proceeding Chapter, the project implementation is economically feasible. On the occasion of the project, it is recommended that FMO should apply a commission of service charge at rate of two (2)% to every fishing boats based upon the above ACT.

Table 10.6.1 shows total revenues.

10.6.2. Phuket Fisheries Processing Zone

Revenues consist of sale/lease of land paid to FMO by companies of tuna canning plants and service charges for public facilities in the zone paid to IEAT by the companies. The total revenues is shown in Table 10.6.1.

10.7. Project Costs

10.7.1. Investment Cost

Table 10.7.1 shows the investment costs of Fishing Port and the Fisheries Processing Zone.

10.7.2. Operation Costs

Table 10.7.2 shows the operation costs of the Fishing Port and the Fisheries Processing Zone.

10.8. Depreciation Costs

Table 10.8.1 shows the changes of depreciation costs of the Fishing Port and the Fisheries Processing Zone.

10.9. Fund Raising

In respect to long-term loan for the investment cost, the repayment schedule of the Fishing Port and the Fisheries Processing Zone are shown in Tables 10.9.1 to 10.9.6 in the main report.

10.10. Result of Cost-Benefit Analysis

The financial rate of return (FIRR) based on the cost-benefit Analysis are as follows:

Phuket Fishing Port: 4.17%, Fisheries Processing Zone: 3.07%, Total 3.99%.

Judging from the results, as FIRR exceeds 3% of the interest rate of loans the project is regarded as financially feasible.

In order to determine whether or not the project is feasible when certain conditions change, a sensitivity analysis was conducted for the following three alternatives.

	Fishing Port FIRR(%)	Processing Zone FIRR(%)
Case A: Cost increase by 10%	3.41	2.46
Case B: Benefit increase by 10%	4.97	3.70
Case C: Cost increase by 10%, Benefit decrease by 10%	2.63	1.82

10.11. Result of Financial Statements

In respect to the Fishing Port and the Fisheries Processing Zone, each financial statements consisted of income statement, cash flow statement and balance sheet are shown in Tables from 10.11.1(1) to 10.11.1(3) and Tables from 10.11.2.(1) to 10.11.2(3).

The financial statements was studied from the viewpoint of profitability, loan repayment capacity and operational efficiency, using authorized ratio. The result is shown in Tables 10.11.3(1)and 10.11.3(2). As the ratios exceed average level, financial soundness of the above execution agencies will be kept with the project.

10.12. Evaluation

From the results of the above analysis, it is appraised that the project implementation is feasible financially.

Table 10.6.1 Revenues

(Unit: 000 Baht)

Year	1995	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Fishing port	4,853	4,853	4,853	4,853	4,853	4,853	4,853	4,853	4,853	4,853	4,853	4,853	4,853
Processing zone	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	4,853	4,853	4,853	4,853	4,853	4,853	4,853	4,853	4,853	4,853	4,853	4,853	4,853
Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fishing port	14,529	14,529	14,529	14,529	14,529	14,529	14,529	14,529	14,529	14,529	14,529	14,529	14,529
Processing zone	20,455	20,455	20,455	20,455	20,455	20,455	20,455	20,455	20,455	20,455	20,455	20,455	20,455
Total	35,024	35,024	35,024	35,024	35,024	35,024	35,024	35,024	35,024	35,024	35,024	35,024	35,024
Year	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Fishing port	14,529	14,529	14,529	14,529	14,529	14,529	14,529	14,529	14,529	14,529	14,529	14,529	14,529
Processing zone	20,455	20,455	20,455	20,455	20,455	20,455	20,455	20,455	20,455	20,455	20,455	20,455	20,455
Total	35,024	35,024	35,024	35,024	35,024	35,024	35,024	35,024	35,024	35,024	35,024	35,024	35,024

Table 10.7.1 Investment Cost (Market Prices)

Items	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	0.7M	(P/P)	Total	(P/P)	Total	(P/P)	Total	(P/P)	Total	(P/P)	Total	(P/P)	Total	(P/P)	Total	(P/P)	Total	(P/P)	Total	(P/P)
Public investment																				
Fishing Port	1,14,021	724,414	309,426	1,929,111	79,875	71,031	640,764	481,376	1,942,376	34,929	37,431	47,298	247,456	333,539	111,912					
Functional facilities	340,767	136,601	200,166				97,082	21,488	703,241	248,723	115,113	133,612								
Subtotal facilities	1,012,018	861,015	746,016	1,508,111	79,875	71,031	537,846	502,864	1,645,617	463,649	142,544	381,910	247,456	333,539	111,912					
Infrastructure	102,529	0	102,529																	
Subtotal	199,058	0	199,058																	
Total	1,919,296	861,015	1,048,242	1,508,111	79,875	71,031	437,764	502,864	1,645,617	463,649	142,544	381,910	247,456	333,539	111,912					
Private investment																				
Processing zone	1,014,296	34,973	1,070,319																	
G.Total	1,924,325	895,988	2,128,491	1,508,111	79,875	71,031	537,764	502,864	1,645,617	463,649	142,544	381,910	247,456	333,539	111,912					

(Unit: 1,000 Baht)

Table 10.7.2 (1) Operation Cost of Phuket Fishing Port

(unit: 1,000 Baht)

Year	Personnel Cost	Administration Cost	Maintenance & Repair	Maneuvering Cost by tug	Total
1996	2,088	1,044	494	0	3,626
1997	2,088	1,044	494	0	3,626
1998	2,088	1,044	494	0	3,626
1999	2,088	1,044	494	0	3,626
2000	2,088	1,044	494	0	3,626
2001	2,088	1,044	1,064	0	4,196
2002	5,424	2,712	2,312	0	10,448
2003	5,424	2,712	4,448	0	12,584
2004	5,424	2,712	5,886	0	14,022
2005	5,424	2,712	5,886	0	14,022
2006	5,424	2,712	5,886	240	14,262
2007	5,424	2,712	11,278	496	19,910
↓					
2031	5,424	2,712	11,278	496	19,910

Table 10.7.2 (2) Operation Cost of Fisheries Processing Zone

(unit: 1,000 Baht)

Year	Personnel Cost	Administration Cost	Maintenance & Repair	Total
2001	552	276	0	828
2002	0	0	0	0
2003	552	276	0	828
2004	552	276	0	828
2005	1,464	732	0	2,196
2006	1,464	732	0	2,196
2007	1,464	732	1,511	3,707
↓				
2031	1,464	732	1,511	3,707

Table 10.8.1 (1) Fixed Assets of Phuket Fishing Port

Unit:000Baht

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Fixed Assets at beginning Year												
Existing Facilities	20,201	19,314	18,727	17,940	17,153	16,366	15,579	14,792	14,005	13,218	12,431	11,644
New Facilities	0	0	0	0	0	119,043	899,484	1,304,041	1,558,402	1,812,976	1,477,550	1,437,124
Investment	0	0	0	0	150,911	753,040	465,640	247,456	0	0	0	0
Facilities & Equipments	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation	787	787	787	787	787	787	787	787	787	787	787	787
Existing Facilities	0	0	0	0	0	0	0	0	0	0	0	0
New Facilities	0	0	0	0	0	2,851	22,558	33,256	40,426	40,426	40,426	40,426
Fixed Assets at end of Year												
Land	0	0	0	0	0	0	0	0	0	0	0	0
Existing Facilities	19,514	18,727	17,940	17,153	16,366	15,579	14,792	14,005	13,218	12,431	11,644	10,857
New Facilities	0	0	0	0	114,043	899,484	1,304,041	1,558,402	1,517,976	1,477,550	1,437,124	1,396,698
Work in Progress	0	0	0	0	36,868	1,616	40,141	0	0	0	0	0
Total	19,514	18,727	17,940	17,153	167,277	916,679	1,358,974	1,572,407	1,531,104	1,489,981	1,448,768	1,407,555

Item	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fixed Assets at beginning Year												
Existing Facilities	10,857	10,070	9,283	8,496	7,709	6,922	6,135	5,348	4,561	3,774	2,987	2,200
New Facilities	1,306,698	1,356,272	1,313,848	1,275,420	1,234,094	1,194,568	1,154,142	1,113,716	1,073,290	1,032,864	992,438	952,012
Investment	0	0	0	0	0	0	0	0	0	0	0	0
Facilities & Equipments	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation	787	787	787	787	787	787	787	787	787	787	787	787
Existing Facilities	0	0	0	0	0	0	0	0	0	0	0	0
New Facilities	0	0	0	0	0	40,426	40,426	40,426	40,426	40,426	40,426	40,426
Fixed Assets at end of Year												
Land	0	0	0	0	0	0	0	0	0	0	0	0
Existing Facilities	10,070	9,283	8,496	7,709	6,922	6,135	5,348	4,561	3,774	2,987	2,200	1,413
New Facilities	1,356,272	1,315,946	1,275,420	1,234,994	1,194,568	1,154,142	1,113,716	1,073,290	1,032,864	992,438	952,012	911,486
Work in Progress	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,366,242	1,325,129	1,283,916	1,242,703	1,201,490	1,160,277	1,119,064	1,077,851	1,036,638	995,425	954,212	912,999

Item	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Fixed Assets at beginning Year												
Existing Facilities	1,413	626	0	0	0	0	0	0	0	0	0	0
New Facilities	911,566	871,160	830,734	790,308	749,882	709,456	669,030	628,604	588,178	547,752	507,326	466,900
Investment	0	0	0	0	0	0	0	0	0	0	0	0
Facilities & Equipments	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation	787	626	0	0	0	0	0	0	0	0	0	0
Existing Facilities	0	0	0	0	0	0	0	0	0	0	0	0
New Facilities	40,426	40,426	40,426	40,426	40,426	40,426	40,426	40,426	40,426	40,426	40,426	40,426
Fixed Assets at end of Year												
Land	0	0	0	0	0	0	0	0	0	0	0	0
Existing Facilities	626	0	0	0	0	0	0	0	0	0	0	0
New Facilities	871,160	830,734	790,308	749,882	709,456	669,030	628,604	588,178	547,752	507,326	466,900	426,474
Work in Progress	0	0	0	0	0	0	0	0	0	0	0	0
Total	871,796	830,734	790,308	749,882	709,456	669,030	628,604	588,178	547,752	507,326	466,900	426,474

Table 10.8.1 (2) Fixed Assets of Fisheries Processing Zone

Item	Unit: '000 Bq/n											
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Fixed Assets at beginning Year												
New Facilities	0	0	0	302,232	294,676	287,170	279,564	272,008	264,452	256,896	249,340	241,784
Investment	199,704	199,704	199,704	0	0	0	0	0	0	0	0	0
Facilities & Equipments	199,704	199,704	199,704	0	0	0	0	0	0	0	0	0
Depreciation	0	0	0	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556
New Facilities	0	0	0	302,232	294,676	287,170	279,564	272,008	264,452	256,896	249,340	241,784
Fixed Assets at end of Year	199,704	199,704	302,232	302,232	302,232	302,232	302,232	302,232	302,232	302,232	302,232	302,232
New Facilities	199,704	199,704	302,232	302,232	302,232	302,232	302,232	302,232	302,232	302,232	302,232	302,232
Work in Progress	199,704	199,704	302,232	302,232	302,232	302,232	302,232	302,232	302,232	302,232	302,232	302,232
Total	199,704	199,704	302,232	302,232	302,232	302,232	302,232	302,232	302,232	302,232	302,232	302,232

Item	Unit: '000 Bq/n											
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Fixed Assets at beginning Year												
New Facilities	234,228	226,672	219,116	211,560	204,004	196,448	188,892	181,336	173,780	166,224	158,668	151,112
Investment	0	0	0	0	0	0	0	0	0	0	0	0
Facilities & Equipments	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556
New Facilities	234,228	226,672	219,116	211,560	204,004	196,448	188,892	181,336	173,780	166,224	158,668	151,112
Fixed Assets at end of Year	234,228	226,672	219,116	211,560	204,004	196,448	188,892	181,336	173,780	166,224	158,668	151,112
New Facilities	234,228	226,672	219,116	211,560	204,004	196,448	188,892	181,336	173,780	166,224	158,668	151,112
Work in Progress	0	0	0	0	0	0	0	0	0	0	0	0
Total	234,228	226,672	219,116	211,560	204,004	196,448	188,892	181,336	173,780	166,224	158,668	151,112

Item	Unit: '000 Bq/n											
	2025	2026	2027	2028	2029	2030	2031					
Fixed Assets at beginning Year												
New Facilities	147,556	136,000	128,444	120,888	113,332	105,776	98,220					
Investment	0	0	0	0	0	0	0					
Facilities & Equipments	0	0	0	0	0	0	0					
Depreciation	7,556	7,556	7,556	7,556	7,556	7,556	7,556					
New Facilities	147,556	136,000	128,444	120,888	113,332	105,776	98,220					
Fixed Assets at end of Year	147,556	136,000	128,444	120,888	113,332	105,776	98,220					
New Facilities	147,556	136,000	128,444	120,888	113,332	105,776	98,220					
Work in Progress	0	0	0	0	0	0	0					
Total	147,556	136,000	128,444	120,888	113,332	105,776	98,220					

Table 10.9.1 Repayment Schedule of Loan Phuket Fishing Port (2000)

A. Borrowing Conditions (in 2000)

Borrowing	79,876,000	Interest rate	3.0%	Grace period	7years
				Repayment period	18years

1. Payment of Interest for Grace Period

Grace period	Interest	
1	2,396,280	2000
2	2,396,280	2001
3	2,396,280	2002
4	2,396,280	2003
5	2,396,280	2004
6	2,396,280	2005
7	2,396,280	2006

2. Repayment

Total Repayment 81,786,474

Borrowing	79,876,000	Interest rate	3.0%	Repayment year	18
					(unit:Baht)
Repayment Year	Principal	Interest	Principal Repayment	Total Repayment	Balance
1	79,876,000	199,690	4,344,003	4,543,693	75,531,997
2	75,531,997	188,829	4,354,864	4,543,693	71,177,133
3	71,177,133	177,942	4,365,751	4,543,693	66,811,382
4	66,811,382	167,028	4,376,665	4,543,693	62,434,717
5	62,434,717	156,086	4,387,607	4,543,693	58,047,110
6	58,047,110	145,117	4,398,576	4,543,693	53,648,534
7	53,648,534	134,121	4,409,572	4,543,693	49,238,962
8	49,238,962	123,097	4,420,596	4,543,693	44,818,366
9	44,818,366	112,045	4,431,648	4,543,693	40,386,718
10	40,386,718	100,966	4,442,727	4,543,693	35,943,991
11	35,943,991	89,859	4,453,834	4,543,693	31,490,157
12	31,490,157	78,725	4,464,968	4,543,693	27,025,189
13	27,025,189	67,562	4,476,131	4,543,693	22,549,058
14	22,549,058	56,372	4,487,321	4,543,693	18,061,737
15	18,061,737	45,154	4,498,539	4,543,693	13,563,198
16	13,563,198	33,907	4,509,786	4,543,693	9,053,412
17	9,053,412	22,633	4,521,060	4,543,693	4,532,352
18	4,532,352	11,330	4,532,363	4,543,693	-11
Total		1,910,463	79,876,011	81,786,474	

Table 10.9.2 Repayment Schedule of Loan Phuket Fishing Port (2001)

A. Borrowing Conditions (in 2001)

Borrowing	502,858,000	Interest rate	3.0%	Grace period	7years
				Repayment period	18years

1. Payment of Interest for Grace Period

Grace period	Interest	
1	15,085,740	2001
2	15,085,740	2002
3	15,085,740	2003
4	15,085,740	2004
5	15,085,740	2005
6	15,085,740	2006
7	15,085,740	2007

2. Repayment

Total Repayment 514,885,356

Borrowing	502,858,000	Interest rate	3.0%	Repayment year	18	
(unit: Baht)						
Repayment Year	Principal	Interest	Principal Repayment	Total Repayment	Balance	
1	502,858,000	1,257,145	27,347,597	28,604,742	475,510,403	2008
2	475,510,403	1,188,776	27,415,966	28,604,742	448,094,437	2009
3	448,094,437	1,120,236	27,484,506	28,604,742	420,609,931	2010
4	420,609,931	1,051,524	27,553,218	28,604,742	393,056,713	2011
5	393,056,713	982,641	27,622,101	28,604,742	365,434,612	2012
6	365,434,612	913,586	27,691,156	28,604,742	337,743,456	2013
7	337,743,456	844,358	27,760,384	28,604,742	309,983,072	2014
8	309,983,072	774,957	27,829,785	28,604,742	282,153,287	2015
9	282,153,287	705,383	27,899,359	28,604,742	254,253,928	2016
10	254,253,928	635,634	27,969,108	28,604,742	226,284,820	2017
11	226,284,820	565,712	28,039,030	28,604,742	198,245,790	2018
12	198,245,790	495,614	28,109,128	28,604,742	170,136,662	2019
13	170,136,662	425,341	28,179,401	28,604,742	141,957,261	2020
14	141,957,261	354,893	28,249,849	28,604,742	113,707,412	2021
15	113,707,412	284,268	28,320,474	28,604,742	85,386,938	2022
16	85,386,938	213,467	28,391,275	28,604,742	56,995,663	2023
17	56,995,663	142,489	28,462,253	28,604,742	28,533,410	2024
18	28,533,410	71,333	28,533,409	28,604,742	1	2025
Total		12,027,357	502,857,999	514,885,356		

Table 10.9.3 Repayment Schedule of Loan Phuket Fishing Port (2002)

A. Borrowing Conditions (in 2002)

Borrowing	142,744,000	Interest rate	3.0%	Grace period	7 years
				Repayment period	18 years

1. Payment of Interest for Grace Period

Grace period	Interest	
1	4,282,320	2002
2	4,282,320	2003
3	4,282,320	2004
4	4,282,320	2005
5	4,282,320	2006
6	4,282,320	2007
7	4,282,320	2008

2. Repayment

Total Repayment 146,158,146

Borrowing	142,744,000	Interest rate	3.0%	Repayment year	18
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(unit: Baht)

Repayment Year	Principal	Interest	Principal Repayment	Total Repayment	Balance	
1	142,744,000	356,860	7,763,037	8,119,897	134,980,963	2009
2	134,980,963	337,452	7,782,445	8,119,897	127,198,518	2010
3	127,198,518	317,996	7,801,901	8,119,897	119,396,617	2011
4	119,396,617	298,491	7,821,406	8,119,897	111,575,211	2012
5	111,575,211	278,938	7,840,959	8,119,897	103,734,252	2013
6	103,734,252	259,335	7,860,562	8,119,897	95,873,690	2014
7	95,873,690	239,684	7,880,213	8,119,897	87,993,477	2015
8	87,993,477	219,983	7,899,914	8,119,897	80,093,563	2016
9	80,093,563	200,233	7,919,664	8,119,897	72,173,899	2017
10	72,173,899	180,434	7,939,463	8,119,897	64,234,436	2018
11	64,234,436	160,586	7,959,311	8,119,897	56,275,125	2019
12	56,275,125	140,687	7,979,210	8,119,897	48,295,915	2020
13	48,295,915	120,739	7,999,158	8,119,897	40,296,757	2021
14	40,296,757	100,741	8,019,156	8,119,897	32,277,601	2022
15	32,277,601	80,694	8,039,203	8,119,897	24,238,398	2023
16	24,238,398	60,595	8,059,302	8,119,897	16,179,096	2024
17	16,179,096	40,447	8,079,450	8,119,897	8,099,646	2025
18	8,099,646	20,249	8,099,648	8,119,897	-2	2026
Total		3,414,144	142,744,002	146,158,146		

Table 10.9.4 Repayment Schedule of Loan Phuket Fishing Port (2003)

A. Borrowing Conditions (in 2003)

Borrowing	135,539,000	Interest rate	3.0%	Grace period	7 years
				Repayment period	18 years

1. Payment of Interest for Grace Period

Grace period	Interest	
1	4,066,170	2003
2	4,066,170	2004
3	4,066,170	2005
4	4,066,170	2006
5	4,066,170	2007
6	4,066,170	2008
7	4,066,170	2009

2. Repayment

Total Repayment 138,780,810

Borrowing	135,539,000	Interest rate	3.0%	Repayment year	18
					(unit - Baht)

Repayment Year	Principal	Interest	Principal Repayment	Total Repayment	Balance	
1	135,539,000	338,847	7,371,198	7,710,045	128,167,802	2010
2	128,167,802	320,419	7,389,626	7,710,045	120,778,176	2011
3	120,778,176	301,945	7,408,100	7,710,045	113,370,076	2012
4	113,370,076	283,425	7,426,620	7,710,045	105,943,456	2013
5	105,943,456	264,858	7,445,187	7,710,045	98,498,269	2014
6	98,498,269	246,245	7,463,800	7,710,045	91,034,469	2015
7	91,034,469	227,586	7,482,459	7,710,045	83,552,010	2016
8	83,552,010	208,880	7,501,165	7,710,045	76,050,845	2017
9	76,050,845	190,127	7,519,918	7,710,045	68,530,927	2018
10	68,530,927	171,327	7,538,718	7,710,045	60,992,209	2019
11	60,992,209	152,480	7,557,565	7,710,045	53,434,644	2020
12	53,434,644	133,586	7,576,459	7,710,045	45,858,185	2021
13	45,858,185	114,645	7,595,400	7,710,045	38,262,785	2022
14	38,262,785	95,656	7,614,389	7,710,045	30,648,396	2023
15	30,648,396	76,620	7,633,425	7,710,045	23,014,971	2024
16	23,014,971	57,537	7,652,508	7,710,045	15,362,463	2025
17	15,362,463	38,406	7,671,639	7,710,045	7,690,824	2026
18	7,690,824	19,227	7,690,818	7,710,045	6	2027
Total		3,241,816	135,538,994	138,780,810		

Table 10.9.5 Repayment Schedule of Loan Fisheries Processing Zone (2001)

A. Borrowing Conditions (in 2001)

Borrowing	135,539,000	Interest rate	3.0%	Grace period	7years
				Repayment period	18years

1. Payment of Interest for Grace Period

Grace period	Interest	
1	4,066,170	2001
2	4,066,170	2002
3	4,066,170	2003
4	4,066,170	2004
5	4,066,170	2005
6	4,066,170	2006
7	4,066,170	2007

2. Repayment

Total Repayment 138,780,810

Borrowing	135,539,000	Interest rate	3.0%	Repayment year	18
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(unit - Baht)

Repayment Year	Principal	Interest	Principal Repayment	Total Repayment	Balance	
1	135,539,000	338,847	7,371,198	7,710,045	128,167,802	2008
2	128,167,802	320,419	7,389,626	7,710,045	120,778,176	2009
3	120,778,176	301,945	7,408,100	7,710,045	113,370,076	2010
4	113,370,076	283,425	7,426,620	7,710,045	105,943,456	2011
5	105,943,456	264,858	7,445,187	7,710,045	98,498,269	2012
6	98,498,269	246,245	7,463,800	7,710,045	91,034,469	2013
7	91,034,469	227,586	7,482,459	7,710,045	83,552,010	2014
8	83,552,010	208,880	7,501,165	7,710,045	76,050,845	2015
9	76,050,845	190,127	7,519,918	7,710,045	68,530,927	2016
10	68,530,927	171,327	7,538,718	7,710,045	60,992,209	2017
11	60,992,209	152,480	7,557,565	7,710,045	53,434,644	2018
12	53,434,644	133,586	7,576,459	7,710,045	45,858,185	2019
13	45,858,185	114,645	7,595,400	7,710,045	38,262,785	2020
14	38,262,785	95,656	7,614,389	7,710,045	30,648,396	2021
15	30,648,396	76,620	7,633,425	7,710,045	23,014,971	2022
16	23,014,971	57,537	7,652,508	7,710,045	15,362,463	2023
17	15,362,463	38,406	7,671,639	7,710,045	7,690,824	2024
18	7,690,824	19,227	7,690,818	7,710,045	6	2025
Total		3,241,816	135,538,994	138,780,810		

Table 10.9.6 Repayment Schedule of Loan Fisheries Processing Zone (2003)

B. Borrowing Conditions (in 2003)

Borrowing	61,517,000	Interest rate	3.0%	Grace period	7 years
				Repayment period	18 years

1. Payment of Interest for Grace Period

Grace period	Interest	
1	1,845,510	2003
2	1,845,510	2004
3	1,845,510	2005
4	1,845,510	2006
5	1,845,510	2007
6	1,845,510	2008
7	1,845,510	2009

2. Repayment

Total Repayment 62,988,354

Borrowing	61,517,000	Interest rate	3.0%	Repayment year	18
(unit : Baht)					

Repayment Year	Principal	Interest	Principal Repayment	Total Repayment	Balance	
1	61,517,000	153,792	3,345,561	3,499,353	58,171,439	2010
2	58,171,439	145,428	3,353,925	3,499,353	54,817,514	2011
3	54,817,514	137,043	3,362,310	3,499,353	51,455,204	2012
4	51,455,204	128,638	3,370,715	3,499,353	48,084,489	2013
5	48,084,489	120,211	3,379,142	3,499,353	44,705,347	2014
6	44,705,347	111,763	3,387,590	3,499,353	41,317,757	2015
7	41,317,757	103,294	3,396,059	3,499,353	37,921,698	2016
8	37,921,698	94,804	3,404,549	3,499,353	34,517,149	2017
9	34,517,149	86,292	3,413,061	3,499,353	31,104,088	2018
10	31,104,088	77,760	3,421,593	3,499,353	27,682,495	2019
11	27,682,495	69,206	3,430,147	3,499,353	24,252,348	2020
12	24,252,348	60,630	3,438,723	3,499,353	20,813,625	2021
13	20,813,625	52,034	3,447,319	3,499,353	17,366,306	2022
14	17,366,306	43,415	3,455,938	3,499,353	13,910,368	2023
15	13,910,368	34,775	3,464,578	3,499,353	10,445,790	2024
16	10,445,790	26,114	3,473,239	3,499,353	6,972,551	2025
17	6,972,551	17,431	3,481,922	3,499,353	3,490,629	2026
18	3,490,629	8,726	3,490,627	3,499,353	2	2027
Total		1,471,356	61,516,998	62,988,354		

Table 10.11.1 (1) Income Statement of Phuket Fishing Port

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Income	4,802	4,933	4,933	4,933	4,933	4,933	4,933	62,732	64,624	73,418	79,678	96,887	114,329
Expenditure	3,332	3,626	3,626	3,626	3,626	4,196	4,196	10,448	12,584	14,022	14,022	14,262	19,910
Interest	0	0	0	0	0	2,396	17,482	21,764	25,830	25,830	25,830	25,830	26,030
Profit before Depreciation	1,470	1,307	1,307	1,307	1,307	-1,189	-16,843	30,720	26,210	33,566	39,826	56,795	68,389
Depreciation	787	787	787	787	787	787	1,038	23,345	34,023	41,213	41,213	41,213	41,213
Profit after Depreciation	683	520	520	520	520	-1,976	-20,443	7,375	-7,813	-7,647	-1,387	15,582	27,176
Income Tax	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Profit after Income Tax	683	520	520	520	520	-1,976	-20,443	7,375	-7,813	-7,647	-1,387	15,582	27,176
Accumulated Net Profit	683	1,103	1,523	1,943	2,363	387	-20,096	-12,721	-20,534	-28,181	-29,568	-13,986	13,290

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Income	114,329	114,329	114,329	114,329	114,329	114,329	114,329	114,329	114,329	114,329	114,329	114,329	114,329
Expenditure	19,910	19,910	19,910	19,910	19,910	19,910	19,910	19,910	19,910	19,910	19,910	19,910	19,910
Interest	9,794	3,730	1,963	1,966	1,728	1,610	1,491	1,373	1,254	1,135	1,015	896	774
Profit before Depreciation	84,825	88,889	92,656	92,713	92,891	93,009	93,126	93,246	93,365	93,484	93,604	93,723	93,843
Depreciation	41,213	41,213	41,213	41,213	41,213	41,213	41,213	41,213	41,213	41,213	41,213	41,213	41,213
Profit after Depreciation	43,612	47,676	51,443	51,500	51,678	51,796	51,915	52,033	52,152	52,271	52,391	52,510	52,632
Income Tax	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Profit after Income Tax	43,612	47,676	51,443	51,500	51,678	51,796	51,915	52,033	52,152	52,271	52,391	52,510	52,632
Accumulated Net Profit	57,002	104,678	156,121	207,681	259,359	311,135	363,070	415,103	467,255	519,526	571,917	624,427	677,059

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Income	114,329	114,329	114,329	114,329	114,329	114,329	114,329	114,329	114,329	114,329	114,329
Expenditure	19,910	19,910	19,910	19,910	19,910	19,910	19,910	19,910	19,910	19,910	19,910
Interest	655	534	413	290	169	58	19				
Profit before Depreciation	93,864	94,085	94,206	94,327	94,450	94,561	94,680	94,800	94,919	95,039	95,159
Depreciation	41,052	40,426	40,426	40,426	40,426	40,426	40,426	40,426	40,426	40,426	40,426
Profit after Depreciation	52,912	53,659	53,780	53,903	54,024	54,135	54,247	54,359	54,471	54,583	54,695
Income Tax	0	0	0	0	0	0	0	0	0	0	0
Net Profit after Income Tax	52,912	53,659	53,780	53,903	54,024	54,135	54,247	54,359	54,471	54,583	54,695
Accumulated Net Profit	729,971	783,630	837,410	891,313	945,337	999,472	1,053,646	1,107,839	1,162,032	1,216,233	1,270,438

Table 10.11.1 (2) Cash Flow Statement of Phuket Fishing Port

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Source of Funds	1,207	1,207	1,207	1,207	1,207	78,687	466,013	173,666	161,239	33,366	32,826	56,773	68,289
Profit Before Depreciation	1,207	1,207	1,207	1,207	1,207	-1,189	116,845	30,729	26,210	33,566	39,256	56,773	68,289
Long-term Loans	0	0	0	0	0	79,876	502,838	142,744	133,339	0	0	0	0
Appraisal of Trade	0	0	0	0	0	130,911	733,030	463,640	247,236	0	0	0	0
Appraisal Cost of New Facilities	0	0	0	0	0	130,911	733,040	463,640	247,236	0	0	0	0
Appraisal	0	0	0	0	0	0	0	0	0	0	0	0	4,344
Income Tax	0	0	0	0	0	0	0	0	0	0	0	0	0
Increase/Decrease of Net Current Assets	1,207	1,207	1,207	1,207	1,207	-72,224	-207,027	-292,176	-43,707	33,366	39,256	56,773	68,289
Current Assets at End of Year	0	1,207	-4,114	-4,621	-4,621	-47,596	-134,623	-226,800	-270,507	-476,140	-436,884	-380,110	-312,824
Source of Funds	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Source of Funds	84,823	84,823	92,650	92,773	92,891	93,009	93,128	93,246	93,365	93,484	93,604	93,723	93,843
Profit Before Depreciation	84,823	84,823	92,650	92,773	92,891	93,009	93,128	93,246	93,365	93,484	93,604	93,723	93,843
Long-term Loans	0	0	0	0	0	0	0	0	0	0	0	0	0
Appraisal of Trade	31,703	39,545	47,015	47,133	47,250	47,368	47,487	47,606	47,724	47,843	47,963	48,083	48,203
Appraisal Cost of New Facilities	31,703	39,545	47,015	47,133	47,250	47,368	47,487	47,606	47,724	47,843	47,963	48,083	48,203
Appraisal	0	0	0	0	0	0	0	0	0	0	0	0	0
Income Tax	0	0	0	0	0	0	0	0	0	0	0	0	0
Increase/Decrease of Net Current Assets	53,120	45,278	45,635	45,640	45,641	45,641	45,641	45,641	45,641	45,641	45,641	45,641	45,642
Current Assets at End of Year	-44,723	-115,408	-3,697,671	-3,241,127	-2,784,869	-2,328,446	-1,872,205	-1,415,963	-959,824	-503,284	-4,640	44,977	86,639
Source of Funds	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031		
Source of Funds	93,264	94,035	94,806	94,571	94,336	94,101	93,866	93,631	93,396	93,161	92,926	92,691	92,456
Profit Before Depreciation	93,264	94,035	94,806	94,571	94,336	94,101	93,866	93,631	93,396	93,161	92,926	92,691	92,456
Long-term Loans	0	0	0	0	0	0	0	0	0	0	0	0	0
Appraisal of Trade	48,324	48,444	48,564	48,683	48,803	48,922	49,041	49,161	49,280	49,400	49,519	49,639	49,758
Appraisal Cost of New Facilities	48,324	48,444	48,564	48,683	48,803	48,922	49,041	49,161	49,280	49,400	49,519	49,639	49,758
Appraisal	0	0	0	0	0	0	0	0	0	0	0	0	0
Income Tax	0	0	0	0	0	0	0	0	0	0	0	0	0
Increase/Decrease of Net Current Assets	44,940	45,591	46,242	46,893	47,544	48,195	48,846	49,497	50,148	50,799	51,450	52,101	52,752
Current Assets at End of Year	132,279	177,870	223,461	269,052	314,643	360,234	405,825	451,416	497,007	542,598	588,189	633,780	679,371

Table 10.11.1 (3) Balance Sheet of Phuket Fishing Port

(Unit: 1000 Baht)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Assets													
Fixed Assets	20,301	19,514	18,727	17,940	17,153	16,409	913,063	1,218,633	1,572,407	1,331,194	1,489,881	1,448,766	1,407,555
Work in Progress	0	0	0	0	0	0	16,868	1,616	40,141				
Net Current Assets	0	1,207	2,124	3,621	4,826	47,396	134,423	426,399	712,306	478,740	403,914	582,119	517,874
Total	20,301	20,721	21,141	21,561	21,981	91,881	582,256	732,175	860,101	852,454	851,867	866,649	869,681
Capital Employed													
Capital Fund	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618
Long-Term Loans	0	0	0	0	0	79,376	362,734	723,478	861,017	861,017	861,017	861,017	856,673
Other Reserve and Provisions	683	1,103	1,523	1,943	2,363	387	-20,096	-12,721	-20,334	-28,181	-29,866	-13,986	13,390
Total	20,301	20,721	21,141	21,561	21,981	91,881	582,256	732,175	860,101	852,454	851,867	866,649	869,681
Assets													
Fixed Assets	1,366,347	1,323,129	1,283,916	1,242,703	1,201,490	1,160,277	1,119,064	1,077,851	1,036,638	995,423	954,212	912,999	871,786
Net Current Assets	-64,732	-113,408	-169,767	-224,127	-278,486	-332,846	-387,203	-441,365	-495,924	-550,284	-604,3	-60,997	-80,639
Total	901,599	909,721	914,149	918,576	923,004	927,431	931,859	936,286	940,714	943,141	949,589	953,996	938,425
Capital Employed													
Capital Fund	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618
Long-Term Loans	824,970	783,425	738,410	691,277	644,027	596,638	549,171	501,863	453,841	405,997	358,034	309,951	261,748
Other Reserve and Provisions	57,002	104,678	136,121	207,681	239,339	311,155	363,070	413,103	467,255	519,326	571,917	624,427	677,039
Total	901,599	909,721	914,149	918,576	923,004	927,431	931,859	936,286	940,714	943,141	949,589	953,996	938,425
Assets													
Fixed Assets	800,734	790,308	749,382	709,456	669,030	628,604	588,178	547,752	507,326	466,900	426,474		
Net Current Assets	132,279	177,920	223,561	269,207	319,390	398,177	483,086	579,703	674,324	768,943	863,562		
Total	963,013	968,228	973,443	978,663	988,420	1,026,781	1,071,264	1,127,457	1,181,650	1,235,843	1,290,036		
Capital Employed													
Capital Fund	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618	19,618
Long-Term Loans	213,424	164,980	116,415	67,732	23,463	7,691	0	0	0	0	0	0	0
Other Reserve and Provisions	729,971	785,630	837,410	891,313	945,337	999,472	1,053,646	1,107,839	1,162,032	1,216,235	1,270,418		
Total	963,013	968,228	973,443	978,663	988,420	1,026,781	1,071,264	1,127,457	1,181,650	1,235,843	1,290,036		

Table 10.11.2 (1) Income Statement of Fisheries Processing Zone

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Income	0	0	0	6,326	0	6,326	12,656	20,495	20,495	20,495	20,495	20,495	20,495
Expenditure	8281	0	8281	8281	8281	8281	3,707	3,707	3,707	3,707	3,707	3,707	3,707
Interest	3,995	3,995	5,441	5,441	5,441	5,441	2,146	2,146	2,129	421	396	371	347
Profit before Depreciation	-4,423	-3,995	-4,269	-4,269	-4,269	-4,269	11,347	14,642	14,659	16,367	16,392	16,417	16,441
Depreciation	0	0	0	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556
Profit after Depreciation	-4,423	-3,995	-4,269	-13,825	-8,365	-2,537	3,791	7,086	7,103	8,811	8,836	8,861	8,885
Income Tax	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Profit after Income Tax	-4,423	-3,995	-4,269	-13,825	-8,365	-2,537	3,791	7,086	7,103	8,811	8,836	8,861	8,885
Income Tax	-4,423	-8,018	-14,297	-26,112	-36,977	-39,514	-35,723	-28,637	-21,534	-12,723	-3,887	-4,974	-13,459
Net Profit	0	0	0	0	0	0	0	0	0	0	0	0	0

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Income	20,495	20,495	20,495	20,495	20,495	20,495	20,495	20,495	20,495	20,495	20,495	20,495	20,495
Expenditure	3,707	3,707	3,707	3,707	3,707	3,707	3,707	3,707	3,707	3,707	3,707	3,707	3,707
Interest	321	297	271	246	221	196	170	146	120	94	69	42	17
Profit before Depreciation	16,467	16,491	16,517	16,542	16,567	16,592	16,618	16,642	16,668	16,694	16,719	16,746	16,771
Depreciation	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556
Profit after Depreciation	8,911	8,935	8,961	8,986	9,011	9,036	9,062	9,086	9,112	9,136	9,160	9,180	9,215
Income Tax	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Profit after Income Tax	8,911	8,935	8,961	8,986	9,011	9,036	9,062	9,086	9,112	9,136	9,160	9,180	9,215
Income Tax	22,776	31,705	40,666	49,652	58,663	67,699	76,761	85,847	94,959	104,097	113,260	122,430	131,665
Net Profit	0	0	0	0	0	0	0	0	0	0	0	0	0

	2027	2028	2029	2030	2031
Income	20,495	20,495	20,495	20,495	20,495
Expenditure	3,707	3,707	3,707	3,707	3,707
Interest	91	0	0	0	0
Profit before Depreciation	16,779	16,788	16,788	16,788	16,788
Depreciation	7,556	7,556	7,556	7,556	7,556
Profit after Depreciation	9,223	9,232	9,232	9,232	9,232
Income Tax	0	0	0	0	0
Net Profit after Income Tax	9,223	9,232	9,232	9,232	9,232
Accumulated Net Profit	140,888	150,120	159,352	168,584	177,816

Table 10.11.2 (2) Cash Flow Statement of Fisheries Processing Zone

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
Source of Funds	113,299	-3,293	55,248	-6,269	1,309	3,819	11,247	14,642	14,639	16,187	16,392	16,417	16,441								
Profit before Depreciation	-4,23	-3,293	-6,269	-1,269	1,309	3,819	11,247	14,642	14,639	16,187	16,392	16,417	16,441								
Long-term Loans	119,422	0	61,517	0	0	0	0	0	0	0	0	0	0								
Application of Funds	191,764	0	102,238	0	0	0	0	6,316	6,331	6,693	9,119	9,364	9,369								
Acquisition Cost of New Facilities	196,764	0	102,238	0	0	0	0	0	0	0	0	0	0								
Replacement	0	0	0	0	0	0	0	6,316	6,331	6,693	9,119	9,364	9,369								
Income Tax	0	0	0	0	0	0	0	0	0	0	0	0	0								
Increase/Decrease of Net Current Assets	64,303	-3,293	47,280	-6,269	1,309	3,819	11,247	8,126	8,126	6,472	6,472	6,472	6,472								
Current Assets at End of Year	0	-3,293	-20,873	-5,714	-26,433	-23,284	-2,287	33,961	25,833	19,261	12,790	6,317	35								
Source of Funds	16,467	16,991	16,317	16,342	16,367	16,392	16,618	16,642	16,668	16,694	16,719	16,744	16,771								
Profit before Depreciation	16,467	16,991	16,317	16,342	16,367	16,392	16,618	16,642	16,668	16,694	16,719	16,744	16,771								
Long-term Loans	0	0	0	0	0	0	0	0	0	0	0	0	0								
Application of Funds	9,994	10,019	10,044	10,070	10,094	10,120	10,145	10,170	10,195	10,221	10,247	10,273	10,299								
Acquisition Cost of New Facilities	0	0	0	0	0	0	0	0	0	0	0	0	0								
Replacement	9,994	10,019	10,044	10,070	10,094	10,120	10,145	10,170	10,195	10,221	10,247	10,273	10,299								
Income Tax	0	0	0	0	0	0	0	0	0	0	0	0	0								
Increase/Decrease of Net Current Assets	6,473	6,972	6,273	6,272	6,273	6,272	6,473	6,472	6,473	6,472	6,473	6,472	6,473								
Current Assets at End of Year	6,473	13,445	19,718	26,043	32,418	38,690	45,163	51,635	58,108	64,581	71,054	77,527	84,000								
Source of Funds	16,779	16,779	16,784	16,788	16,793	16,798	16,803	16,808	16,813	16,818	16,823	16,828	16,833								
Profit before Depreciation	16,779	16,784	16,788	16,793	16,798	16,803	16,808	16,813	16,818	16,823	16,828	16,833	16,838								
Long-term Loans	0	0	0	0	0	0	0	0	0	0	0	0	0								
Application of Funds	3,489	0	0	0	0	0	0	0	0	0	0	0	0								
Acquisition Cost of New Facilities	0	0	0	0	0	0	0	0	0	0	0	0	0								
Replacement	3,489	0	0	0	0	0	0	0	0	0	0	0	0								
Income Tax	0	0	0	0	0	0	0	0	0	0	0	0	0								
Increase/Decrease of Net Current Assets	13,290	16,779	16,788	16,793	16,798	16,803	16,808	16,813	16,818	16,823	16,828	16,833	16,838								
Current Assets at End of Year	13,290	30,069	46,857	63,645	80,433	97,221	114,009	130,797	147,585	164,373	181,161	197,949	214,737								

Table 10.11.2 (3) Balance Sheet of Fisheries Processing Zone

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	(Unit: 0000000000)
Assets														
Fixed Assets	0	0	302,332	294,676	287,120	279,564	272,008	264,452	256,896	249,340	241,784	234,228	226,672	
Work in Progress	199,704	199,704												
Net Current Assets	0	-3,395	-50,873	-57,144	-58,453	-53,434	-42,087	-33,061	-23,835	-19,363	-12,890	-6,417	55	
Total	199,704	196,109	251,357	237,532	228,667	226,130	229,921	230,491	231,061	229,977	228,894	227,811	226,727	
Capital Employed														
Capital Fund	84,305	84,305	84,305	84,305	84,305	84,305	84,305	84,305	84,305	84,305	84,305	84,305	84,305	
Long-Term Loans	119,822	119,822	181,339	181,339	181,339	181,339	181,339	174,625	168,290	158,395	148,476	138,532	128,563	
Other Reserve and Provision	-4,423	-4,013	-14,287	-28,112	-36,977	-39,314	-35,729	-28,837	-21,534	-12,723	-3,867	-4,974	-13,859	
Total	199,704	199,109	251,357	237,532	228,667	226,130	229,921	230,491	231,061	229,977	228,894	227,811	226,727	
Assets														
Fixed Assets	219,116	211,560	204,004	196,448	188,892	181,336	173,780	166,224	158,668	151,112	143,556	136,000	128,444	
Net Current Assets	6,528	13,000	19,473	25,945	32,418	38,890	45,363	51,835	58,308	64,781	71,253	77,726	84,199	
Total	225,644	224,560	223,477	222,393	221,310	220,226	219,143	218,059	216,976	215,893	214,809	213,726	212,642	
Capital Employed														
Capital Fund	84,305	84,305	84,305	84,305	84,305	84,305	84,305	84,305	84,305	84,305	84,305	84,305	84,305	
Long-Term Loans	118,369	108,350	98,506	88,436	78,362	68,282	58,202	47,907	37,612	27,317	17,022	6,727	3,489	
Other Reserve and Provision	22,770	31,705	40,666	49,632	58,603	67,639	76,761	85,884	94,959	104,097	113,260	122,450	131,665	
Total	225,444	224,360	223,477	222,393	221,310	220,226	219,143	218,059	216,976	215,893	214,809	213,726	212,642	
Assets														
Fixed Assets	120,888	113,332	105,776	98,220	90,664									
Net Current Assets	104,305	121,093	137,881	154,669	171,457									
Total	225,193	234,425	243,657	252,889	262,121									
Capital Employed														
Capital Fund	84,305	84,305	84,305	84,305	84,305									
Long-Term Loans	0	0	0	0	0									
Other Reserve and Provision	140,888	150,120	159,352	168,584	177,816									
Total	225,193	234,425	243,657	252,889	262,121									

Table 10.11.3 (1) Financial Ratio of Phuket Fishing Port

		Financial Ratio																										
Phuket Fishing Port		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Profitability (Rate of Return on Net Fixed Assets) Mark: over 3% of interest rate Net Operating Income x 100% Net Fixed Assets	100	3	2	2	2	2	-2	-2	1	-0	-0	-0	1	2	3	2	2	2	2	-2	-2	1	-0	-0	-0	1	2	
		3	4	4	4	4	4	5	5	5	5	5	5	6	3	4	4	4	4	4	5	5	5	5	5	6	6	
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031			
		6	7	7	8	8	9	9	10	10	11	12	13			6	7	7	8	8	9	9	10	11	12	13		
		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Loan repayment capacity (Debt Service Coverage Ratio) Mark: over 1 Net operating income before Depreciation Repayment and interest of long-term loan	100	-	-	-	-	-	-0.3	-1.0	1.4	1.0	1.3	1.5	2.2	2.3	-	-	-	-	-	-0.3	-1.0	1.4	1.0	1.3	1.5	2.2	2.3	
		2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031			
		1.9	1.9	1.9	1.9	2.1	6.0	12.3	-	-	-	-	-	-	-	1.9	1.9	1.9	1.9	2.1	6.0	12.3	-	-	-	-	-	-
		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Operational efficiency (Operating Ratio) Mark: less than 70-75% Operation Expenses x 100% Operation Revenues	100	86	91	91	91	91	91	91	88	112	110	102	84	76	86	91	91	91	91	91	88	112	110	102	84	76		
		62	58	55	55	55	55	55	55	54	54	54	54	54	62	58	55	55	55	55	55	55	54	54	54	54	54	
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031			
		54	53	53	53	53	53	53	53	53	53	53	53	53	53	54	53	53	53	53	53	53	53	53	53	53	53	53
		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
(Working Ratio) Mark: less than 50-60% Operation expenses-depreciation x 100% Operation Revenues	100	69	75	75	75	75	75	75	51	59	54	50	41	40	69	75	75	75	75	75	51	59	54	50	41	40		
		26	22	19	19	19	19	19	19	19	18	18	18	18	18	26	22	19	19	19	19	19	18	18	18	18	18	
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031			
		18	18	18	18	18	17	17	17	17	17	17	17	17	17	18	18	18	18	18	17	17	17	17	17	17	17	17
		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	

Table 10.11.3 (2) Financial Ratio of Fisheries Processing Zone

Fisheries Processing Zone	Financial Ratio												
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Profitability (Rate of Return on Net Fixed Assets) Mark: over 3% of interest rate	-	-	2	-5	-3	-1	1	3	3	4	4	4	4
Net operating income x 100%	4	4	4	5	5	5	5	5	6	6	6	7	7
Net Fixed Assets	8	8	9	9	10								
Loan repayment capacity (Dept Service Coverage ratio) Mark: Over 1	-1	-1	-1	-1	-0	1	2	2	2	2	2	2	2
Net operating income before depreciation Repayment and interest of long-term loan	2	2	2	2	2	2	2	2	2	2	2	2	2
	5												
Operational efficiency (Operating Ratio) Mark: less than 70-75%	-	-	-	-	240	120	82	65	65	57	57	57	57
Operation Expenses x 100%	57	56	56	56	56	56	56	56	56	55	55	55	55
Operation Revenues	55	55	55	55	55								
(Working Ratio) Mark: less than 50-60%	-	-	-	-	121	60	45	29	28	20	20	20	20
Operation expenses-depreciation x 100%	20	20	19	19	19	19	19	19	19	19	18	18	18
Operation revenues	18	18	18	18	18								

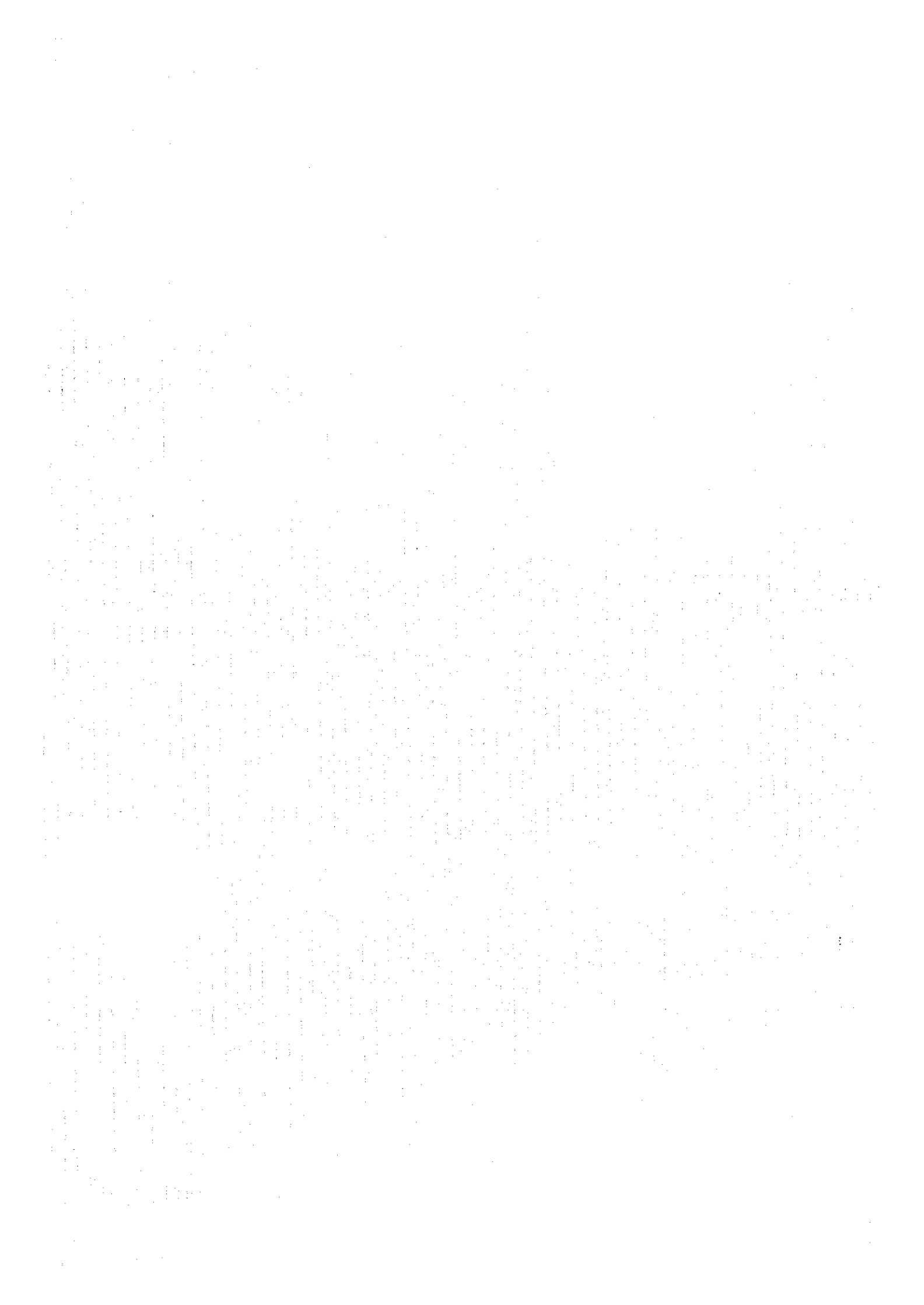
11. Conclusions and Recommendations

11.1. Conclusions

- (1) The current fishery situation shows tendency toward decrease of a fish catch volume by present fishing operation in Thai territorial waters in the Andaman Sea. The tendency leads Thai fishery to necessity of stock control and new fishing ground development for sustainable fishing in the Thai waters of Andaman Sea and Indian Ocean. The former represents necessity to introduce resources management to fishing in Andaman Sea and the latter means development of tuna fishing in the sea and Indian Ocean. Fishery Complex Project will be to develop Phuket Fishing Port as a pilot fishing port for future fishery development.
- (2) The present project aims at relocating fish process plants to the estate. Implementation of the project will enable to reduce transportation costs for processing plants in Phuket and other provinces since these plants will obtain stable supplies of reasonable raw material from the Phuket Fishing Port. The products will be distributed in the local market and exported to the international market.
- (3) Considering the start of full operation of plants, year 2007 is set to be the target year for the short term plan.
- (4) Investment to fishing port facilities for the existing fishery will be minimized with utilizing the existing facilities efficiently. The Project will provide exclusive landing wharves being expected to improve landing efficiency and exclusive wharves for idling and preparation.
- (5) A key segment of this project proposes the relocation of fish processing factories in Bangkok and its surrounding areas to the project site, Phuket. This move is recommended in terms of environmental conservation, alleviating the disparities between urban and rural areas as being in line with the national plan. In addition, relocated factories will receive special tax benefits. Some of the attractive incentives for factories willing to relocate to Phuket are the infrastructure of the industrial estate, low interest capital for relocation activities, procurement of labor, low purchasing cost of raw materials, etc. Therefore, a "Phuket Industrial Estate Operation and Management Committee" will be established to promote the cooperation of relevant agencies and private companies through an exchange of opinions and information. This committee will be comprised of members from DOF, FMO, IEAT, Thailand Industrial Financing Corporation, regional autonomous bodies, and other public agencies, and fish processors, and raw material importers from the private sector.
- (6) The total project cost is estimated at 2,869 million Baht and construction term is estimated at 4 years for civil works and FMO facilities, and 3 years for construction of processing plants.
- (7) The EIRR of the project was calculated at 12.02 % and the project is evaluated as feasible from a viewpoint of the national economy. The FIRR of the project was calculated at 4.17 %, exceeding the interest rate of bank loan. The project is financially viable because of securing profitability and financial soundness.

11.2. Recommendations

- (1) Urgent implementation of the short-term development plan as proposed in the study is recommended for sustainable development of Thai fishery.
- (2) Introduction of fish resources management is recommended to all fishing ports along the Andaman Sea coast as proposed in the plan for fishery development at Phuket Fishing Port.
- (3) For efficient utilization of idling fishing boats and compensation of decreased fish landing volume by trawlers and purse seiners, these boats are recommended to be modified for long line or pole-and-bait fishing. DOF and related governmental authority are expected to render financial assistance for the promotion.
- (4) Acquisition of accurate information on fish catch is indispensable for resource management. To ensure the acquisition, the whole fishing boats involved in trawl and purse seine fishing shall be under the control of FMO with comprehensive authority for the control to the chief of fishing port management.
- (5) The fishing port management shall be given authorities to control entry of fishing boats, to assign wharves for fishing boats, and to control safe traffic in the fishing port and channels
- (6) Improvement of environment in the fishing port is strongly recommended in implementing the project. For the purpose, authority to control discharge of any material will be entrusted to the chief of the fishing port management.
- (7) Hygienical handling and quality control of fish are recommended.
- (8) Legislation for efficient management and operation of fishing ports will be required as modification of the Act on Organizing Activities of Fish Market, enactment of new Act, or notification of the regulations.
- (9) The whole sale market and their companies shall be urgently established for fair transaction.
- (10) It is proposed to establish Fishing Port Coordination Committee composed of FMO, DOF, wholesales company, fish agents, etc. for aiming at smooth management of the fishing port.
- (11) An industrial estate must be developed in order to relocate the fish processing factories. IEAT and FMO are recommended to develop, manage and operate the industrial estate proposed in this Project.



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