

9. FINANCIAL EVALUATION

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(1) Conditions for Financial Evaluation

1) Source of Fund

It is assumed that a foreign loan, under favorable conditions will cover the foreign portion of the project cost. The annual interest rate is 3% and the repayment period is 30 years including the grace period of 10 years.

2) Depreciation Cost

Depreciation cost is estimated by the fixed amount method

3) Physical Life

Refer to Table 8.2

4) Construction Schedule

Refer to Table 9.1

5) Management System

PFDA should supervise the whole project during the construction stage and cooperate with private sectors in the operation and management of the project. Evaluation will be undertaken by the PFDA direct operation.

6) Revenue and Operation Cost

The following cost components are counted in this evaluation.

FTS SECTOR	REVENUE	EXPENSES
Management Sector	-	Wages, Electricity, Water, Fuel, Operating & Maintenance Cost
Transport Sector	Transport charge, transport & selling charge of fish products	Wages, Water, Fuel, Ice, Operating & Maintenance Cost
Plant Sector	Selling charge of product	Raw materials, Wages, Fuel, Water, Electricity, Operating & Maintenance Cost

(2) Financial Evaluation

Income statement and cash flow are shown in Tables 9.2 to 9.9 and Financial Rate of Returns (FIRR) in Table 9.10 and sensitivity in Table 9.11

By the year 1995, net profits after depreciation of whole project including the pilot project are estimated to be \$842,000 and the commercial project excluding the pilot project \$1,278,000. This indicates the PFDA will be able to realize a yield from this project.

The pilot project's annual deficit is estimated to be \$436,000, as the nature of this project is not aimed at making a profit. It is primarily for the transfer of FTS technical know-how. If the profitability is placed importance for this project, the surimi plant and the mobile ice plant have to be excluded from this project because of its unprofitability and they have to be introduced by the PFDA in the future when it is required. Moreover, the PFDA should complete the technology transfer with fish quality control equipment and demonstration facilities within their physical lifespan. The pilot project will be improved in terms of profitability and will be financially feasible by saving on the depreciation costs of the facilities and equipment by adopting the above two methods.

A zone-by-zone comparison shows that Zone 6 is the most profitable and that Zone 3 also capable of producing a profit. However, Zone 1, Zone

2 and the Pasacao prototype site, in which small-scale FTS are to be instituted, will show a deficit. Of the latter zones, a high quality salt-cured fish production system should be set up in Zone 2 in order to make this project profitable. Further, it is desirable to promote the building of fish products carrier vessels locally in Zone 2 and Pasacao, permitting a reduction of the depreciation costs and profitability of the carrier vessels.

Moreover, government subsidies will be necessary continuously for a long period of time for the pilot project and also for several years after the initiation of the projects in all model zones in commercial project.

TABLE 9.1 CONSTRUCTION COST AND INVESTMENT SCHEDULE OF FTS

Site	Year	1	2	3	4	5	Total
		1990	1991	1992	1993	1994	
1. Pilot Project	Total	16,159					16,159
	Foreign	0					0
	Local	16,159					16,159
2. Commercial Project	Total	11,631	14,242	12,438	10,717	2,630	51,658
	Foreign	10,111	12,978	11,615	9,918	2,523	47,145
	Local	1,521	1,264	823	800	107	4,514
2.2 Zone	Total	9,891	14,242	12,438	10,717	2,630	49,918
	Foreign	8,758	12,978	11,615	9,918	2,523	45,791
	Local	1,133	1,264	823	800	107	4,127
2.2.1 Zone 1	Total			8,088	8,088		16,176
	Foreign			7,395	7,395		14,791
	Local			692	692		1,385
2.2.2 Zone 2	Total				2,630	2,630	5,259
	Foreign				2,523	2,523	5,045
	Local				107	107	214
2.2.3 Zone 3	Total	9,891	9,891				19,782
	Foreign	8,758	8,758				17,515
	Local	1,133	1,133				2,267
2.2.4 Zone 6	Total		4,350	4,350			8,701
	Foreign		4,220	4,220			8,440
	Local		130	130			261
2.3 Prototype 8 Pasacao	Total	1,740					1,740
	Foreign	1,353					1,353
	Local	387					387
Grand-Total	Total	27,791	14,242	12,438	10,717	2,630	67,817
	Foreign	10,111	12,978	11,615	9,918	2,523	47,145
	Local	17,680	1,264	823	800	107	20,673

Remark : The price escalation is not included in the investment.

TABLE 9.2 INCOME STATEMENT AND CASH FLOW OF THE PROJECT (1990-2024) (1/4)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
(UNIT : US\$)									
I. Income Statement									
a. Revenue		11,420,095	23,034,076	26,403,013	36,937,966	37,937,109	37,937,109	37,937,109	37,937,109
1. Revenue by Transport		249,414	2,172,919	5,001,856	6,981,094	7,289,761	7,289,761	7,289,761	7,289,761
2. Net Sales by Plant		10,277,238	19,967,714	19,907,714	29,063,429	29,753,905	29,753,905	29,753,905	29,753,905
3. Revenue by Training Vessels and Demonstration Facilities		893,443	893,443	893,443	893,443	893,443	893,443	893,443	893,443
b. Expense		12,687,391	24,097,820	25,862,066	36,342,060	37,580,060	37,580,060	37,580,060	37,580,060
1. Administrative Expense		287,875	482,505	557,979	759,701	856,342	856,342	856,342	856,342
2. Expense by Transport		148,249	730,698	1,450,260	1,700,727	1,807,852	1,807,852	1,807,852	1,807,852
3. Cost of Goods Sold		9,580,039	18,565,310	18,565,310	27,109,060	27,678,716	27,678,716	27,678,716	27,678,716
4. Expense by Training Vessels and Demonstration Facilities		432,526	432,526	432,526	432,526	432,526	432,526	432,526	432,526
5. Depreciation		1,444,605	2,709,347	3,330,695	4,510,614	4,905,515	4,905,515	4,905,515	4,905,515
6. Interest		788,098	1,177,433	1,525,897	1,823,432	1,899,109	1,899,109	1,899,109	1,899,109
c. Income before D & I		965,407	2,823,038	5,456,939	6,935,952	7,161,672	7,161,672	7,161,672	7,161,672
d. Net Income		-1,267,296	-1,063,743	600,348	595,906	357,049	357,049	357,049	357,049
II. Cash Flow									
a. Sources of Funds	27,790,533	14,418,890	14,083,861	14,648,428	7,742,147	5,262,564	5,262,564	5,262,564	5,262,564
1. Foreign Loan	26,269,935	12,977,841	11,615,462	9,917,810	2,522,543				
2. Government Fund	1,520,598	1,263,740	822,795	799,546	107,085	0	0	0	0
3. Depreciation		1,444,605	2,709,347	3,330,695	4,510,614	4,905,515	4,905,515	4,905,515	4,905,515
4. Net Income		-1,267,296	-1,063,743	600,348	595,906	357,049	357,049	357,049	357,049
b. Uses of Funds	27,790,533	14,418,890	14,083,861	14,324,518	7,036,306	4,513,763	554,224	1,601,052	890,742
1. Construction	27,790,533	14,241,581	12,438,257	10,717,385	2,629,628				
2. Reinvestment						0	554,224	1,601,052	890,742
3. Foreign Loan Repayment						0	0	0	0
4. Government Fund Repayment		177,309	1,645,604	3,607,133	4,406,679	4,513,763	0	0	0
c. Balance of Foreign Loan at End	26,269,935	39,247,775	50,863,237	60,781,077	63,303,620	63,303,620	63,303,620	63,303,620	63,303,620
d. Balance of Gov. Fund at End	1,520,598	2,784,338	3,607,133	4,406,679	4,513,763	0	0	0	0
e. Net Cash Flow	0	0	-0	321,909	1,029,250	1,778,551	6,486,890	10,148,402	14,520,224

TABLE 9.2 INCOME STATEMENT AND CASH FLOW OF THE PROJECT (1990-2024) (2/4)

	1999	2000	2001	2002	2003	2004	2005	2006	2007
(UNIT : US\$)									
I. Income Statement									
a. Revenue	37,937,109	37,937,109	37,937,109	37,937,109	37,937,109	37,937,109	37,937,109	37,937,109	37,937,109
1. Revenue by Transport	7,289,761	7,289,761	7,289,761	7,289,761	7,289,761	7,289,761	7,289,761	7,289,761	7,289,761
2. Net Sales by Plant	29,753,905	29,753,905	29,753,905	29,753,905	29,753,905	29,753,905	29,753,905	29,753,905	29,753,905
3. Revenue by Training Vessels and Demonstration Facilities	893,443	893,443	893,443	893,443	893,443	893,443	893,443	893,443	893,443
b. Expense	37,580,060	37,580,060	37,485,105	37,390,149	37,295,194	37,200,238	37,105,283	37,010,328	36,915,372
1. Administrative Expense	856,342	856,342	856,342	856,342	856,342	856,342	856,342	856,342	856,342
2. Expense by Transport	1,807,852	1,807,852	1,807,852	1,807,852	1,807,852	1,807,852	1,807,852	1,807,852	1,807,852
3. Cost of Goods Sold	27,678,716	27,678,716	27,678,716	27,678,716	27,678,716	27,678,716	27,678,716	27,678,716	27,678,716
4. Expense by Training Vessels and Demonstration Facilities	432,526	432,526	432,526	432,526	432,526	432,526	432,526	432,526	432,526
5. Depreciation	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515
6. Interest	1,899,109	1,899,109	1,804,153	1,709,198	1,614,242	1,519,287	1,424,331	1,329,376	1,234,421
c. Income before D & I	7,161,672	7,161,672	7,161,672	7,161,672	7,161,672	7,161,672	7,161,672	7,161,672	7,161,672
d. Net Income	357,049	357,049	452,004	546,959	641,915	736,870	831,826	926,781	1,021,737
II. Cash Flow									
a. Sources of Funds	5,262,564	5,262,564	5,357,519	5,452,475	5,547,430	5,642,385	5,737,341	5,832,296	5,927,251
1. Foreign Loan									
2. Government Fund	0	0	0	0	0	0	0	0	2,279,345
3. Depreciation	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515
4. Net Income	357,049	357,049	452,004	546,959	641,915	736,870	831,826	926,781	1,021,737
b. Uses of Funds	685,559	4,334,866	8,080,584	5,214,461	4,873,229	8,655,986	5,160,543	13,742,733	16,067,434
1. Construction									
2. Reinvestment	685,559	1,169,685	4,915,403	2,049,280	1,708,048	5,490,805	2,001,362	10,577,552	12,902,251
3. Foreign Loan Repayment	0	3,165,181	3,165,181	3,165,181	3,165,181	3,165,181	3,165,181	3,165,181	3,165,181
4. Government Fund Repayment	0	0	0	0	0	0	0	0	0
c. Balance of Foreign Loan at End	63,303,620	60,138,439	56,973,258	53,808,077	50,642,896	47,477,715	44,312,534	41,147,353	37,982,172
d. Balance of Gov. Fund at End	0	0	0	0	0	0	0	0	2,279,345
e. Net Cash Flow	19,097,229	20,024,926	17,301,862	17,539,876	18,214,077	15,200,476	15,771,274	7,860,837	0

TABLE 9.2 INCOME STATEMENT AND CASH FLOW OF THE PROJECT (1990-2024) (3/4)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
(UNIT : US\$)									
I. Income Statement									
a. Revenue	37,937,109	37,937,109	37,937,109	37,937,109	37,937,109	37,937,109	37,937,109	37,937,109	37,937,109
1. Revenue by Transport	7,289,761	7,289,761	7,289,761	7,289,761	7,289,761	7,289,761	7,289,761	7,289,761	7,289,761
2. Net Sales by Plant	29,753,905	29,753,905	29,753,905	29,753,905	29,753,905	29,753,905	29,753,905	29,753,905	29,753,905
3. Revenue by Training Vessels and Demonstration Facilities	893,443	893,443	893,443	893,443	893,443	893,443	893,443	893,443	893,443
b. Expense	36,820,417	36,725,461	36,630,506	36,535,550	36,440,595	36,345,640	36,250,684	36,155,729	36,060,773
1. Administrative Expense	856,342	856,342	856,342	856,342	856,342	856,342	856,342	856,342	856,342
2. Expense by Transport	1,807,852	1,807,852	1,807,852	1,807,852	1,807,852	1,807,852	1,807,852	1,807,852	1,807,852
3. Cost of Goods Sold	27,678,716	27,678,716	27,678,716	27,678,716	27,678,716	27,678,716	27,678,716	27,678,716	27,678,716
4. Expense by Training Vessels and Demonstration Facilities	432,526	432,526	432,526	432,526	432,526	432,526	432,526	432,526	432,526
5. Depreciation	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515
6. Interest	1,139,465	1,044,510	949,554	854,599	759,643	664,688	569,733	474,777	379,822
c. Income before D & I	7,161,672	7,161,672	7,161,672	7,161,672	7,161,672	7,161,672	7,161,672	7,161,672	7,161,672
d. Net Income	1,116,692	1,211,647	1,306,603	1,401,558	1,496,514	1,591,469	1,686,425	1,781,380	1,876,335
II. Cash Flow									
a. Sources of Funds	10,331,862	11,277,065	6,369,937	8,392,493	6,402,029	6,496,984	7,765,244	6,686,895	6,781,851
1. Foreign Loan	4,309,654	5,159,902	157,819	2,085,419	0	0	1,173,304	0	0
2. Government Fund	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515
3. Depreciation	1,116,692	1,211,647	1,306,603	1,401,558	1,496,514	1,591,469	1,686,425	1,781,380	1,876,335
4. Net Income	1,116,692	1,211,647	1,306,603	1,401,558	1,496,514	1,591,469	1,686,425	1,781,380	1,876,335
b. Uses of Funds	10,331,862	11,277,065	6,369,937	8,392,493	6,402,029	6,496,984	7,765,244	6,686,895	6,781,851
1. Construction	7,169,681	8,111,884	3,204,756	5,227,312	3,218,964	480,616	4,600,063	2,916,855	3,393,031
2. Reinvestment	3,165,181	3,165,181	3,165,181	3,165,181	3,165,181	3,165,181	3,165,181	3,165,181	3,165,181
3. Foreign Loan Repayment	0	0	0	0	17,884	2,851,157	0	604,859	223,638
4. Government Fund Reversal	0	0	0	0	0	0	0	0	0
c. Balance of Foreign Loan at End	31,816,991	31,651,810	28,486,629	25,321,448	22,156,267	18,991,086	15,825,905	12,660,724	9,495,543
d. Balance of Gov. Fund at End	6,588,999	11,748,902	11,906,720	13,992,140	13,974,256	11,123,099	12,296,403	11,691,544	11,467,906
e. Net Cash Flow	0	0	0	0	0	0	0	0	0

TABLE 9.2 INCOME STATEMENT AND CASH FLOW OF THE PROJECT (1990-2024) (4/4)

	2017	2018	2019	2020	2021	2022	2023	2024
(UNIT : US\$)								
I. Income Statement								
a. Revenue	37,937,109	37,937,109	37,937,109	37,937,109	37,937,109	37,937,109	37,937,109	37,937,109
1. Revenue by Transport	7,289,761	7,289,761	7,289,761	7,289,761	7,289,761	7,289,761	7,289,761	7,289,761
2. Net Sales by Plant	29,753,905	29,753,905	29,753,905	29,753,905	29,753,905	29,753,905	29,753,905	29,753,905
3. Revenue by Training Vessels and Demonstration Facilities	893,443	893,443	893,443	893,443	893,443	893,443	893,443	893,443
b. Expense	35,965,818	35,870,862	35,775,907	35,680,952	35,680,952	35,680,952	35,680,952	35,680,952
1. Administrative Expense	856,342	856,342	856,342	856,342	856,342	856,342	856,342	856,342
2. Expense by Transport	1,807,852	1,807,852	1,807,852	1,807,852	1,807,852	1,807,852	1,807,852	1,807,852
3. Cost of Goods Sold	27,678,716	27,678,716	27,678,716	27,678,716	27,678,716	27,678,716	27,678,716	27,678,716
4. Expense by Training Vessels and Demonstration Facilities	432,526	432,526	432,526	432,526	432,526	432,526	432,526	432,526
5. Depreciation	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515
6. Interest	284,866	189,911	94,955	0	0	0	0	0
c. Income before D & I	7,161,672	7,161,672	7,161,672	7,161,672	7,161,672	7,161,672	7,161,672	7,161,672
d. Net Income	1,971,291	2,066,216	2,161,282	2,256,157	2,256,157	2,256,157	2,256,157	2,256,157
II. Cash Flow								
a. Sources of Funds	6,876,806	6,971,761	7,066,717	7,161,672	14,996,448	15,468,625	7,959,236	12,280,580
1. Foreign Loan	0	0	0	0	7,834,776	8,306,952	797,561	5,118,907
2. Government Fund	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515	4,905,515
3. Depreciation	1,971,291	2,066,216	2,161,282	2,256,157	2,256,157	2,256,157	2,256,157	2,256,157
4. Net Income	6,876,806	6,971,761	7,066,717	7,161,672	14,996,448	15,468,625	7,959,236	12,280,580
b. Uses of Funds	6,876,806	6,971,761	7,066,717	7,161,672	14,996,448	15,468,625	7,959,236	12,280,580
1. Construction	2,509,487	1,634,910	2,796,393	1,019,469	14,996,448	15,468,625	7,959,236	12,280,580
2. Reinvestment	3,165,181	3,165,181	3,165,181	0	0	0	0	0
3. Foreign Loan Repayment	0	0	0	0	0	0	0	0
4. Government Fund Reversal	1,123,138	2,171,671	1,105,143	6,142,201	0	0	0	0
c. Balance of Foreign Loan at End	6,330,362	3,165,181	0	0	0	0	0	0
d. Balance of Gov. Fund at End	10,344,768	8,173,097	7,067,951	925,750	8,760,526	17,067,479	17,865,042	22,903,949
e. Net Cash Flow	0	0	0	0	0	0	0	0

TABLE 9.3 INCOME STATEMENT AND CASH FLOW OF PILOT PROJECT (1990-2024) (1/4)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
(UNIT : US\$)									
I. Income Statement									
a. Revenue		11,221,753	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753
1. Revenue by Transport		51,071	51,071	51,071	51,071	51,071	51,071	51,071	51,071
2. Net Sales by Plant		10,277,238	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238
3. Revenue by Training Vessels and Demonstration Facilities		893,443	893,443	893,443	893,443	893,443	893,443	893,443	893,443
b. Expense		11,658,499	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499
1. Administrative Expense		277,304	277,304	277,304	277,304	277,304	277,304	277,304	277,304
2. Expense by Transport		64,473	64,473	64,473	64,473	64,473	64,473	64,473	64,473
3. Cost of Goods Sold		9,586,039	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039
4. Expense by Training Vessels and Demonstration Facilities		432,526	432,526	432,526	432,526	432,526	432,526	432,526	432,526
5. Depreciation		1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158
6. Interest		0	0	0	0	0	0	0	0
c. Income before D & I		861,412	861,412	861,412	861,412	861,412	861,412	861,412	861,412
d. Net Income		-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747
II. Cash Flow									
a. Sources of Funds	16,159,110	861,412	861,412	861,412	861,412	861,412	861,412	1,385,446	861,412
1. Foreign Loan									
2. Government Fund	16,159,110	0	0	0	0	0	0	524,035	0
3. Depreciation		1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158
4. Net Income		-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747
b. Uses of Funds	16,159,110	861,412	861,412	861,412	861,412	861,412	861,412	1,385,446	861,412
1. Construction	16,159,110	0	0	0	0	0	0	0	0
2. Reinvestment							554,224	1,385,446	0
3. Foreign Loan Repayment							0	0	0
4. Government Fund Repayment		861,412	861,412	861,412	861,412	861,412	307,187	0	861,412
c. Balance of Foreign Loan at End	0	0	0	0	0	0	0	0	0
d. Balance of Gov. Fund at End	16,159,110	15,297,698	14,436,287	13,574,875	12,713,464	11,852,052	11,514,865	12,068,899	11,207,488
e. Net Cash Flow	0	0	0	0	0	0	0	0	0

TABLE 9.3 INCOME STATEMENT AND CASH FLOW OF PILOT PROJECT (1990-2024) (2/4)

	1999	2000	2001	2002	2003	2004	2005	2006	2007
(UNIT : US\$)									
I. Income Statement									
a. Revenue	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753
1. Revenue by Transport	51,071	51,071	51,071	51,071	51,071	51,071	51,071	51,071	51,071
2. Net Sales by Plant	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238
3. Revenue by Training Vessels and Demonstration Facilities	893,443	893,443	893,443	893,443	893,443	893,443	893,443	893,443	893,443
b. Expense	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499
1. Administrative Expense	277,304	277,304	277,304	277,304	277,304	277,304	277,304	277,304	277,304
2. Expense by Transport	64,473	64,473	64,473	64,473	64,473	64,473	64,473	64,473	64,473
3. Cost of Goods Sold	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039
4. Expense by Training Vessels and Demonstration Facilities	432,526	432,526	432,526	432,526	432,526	432,526	432,526	432,526	432,526
5. Depreciation	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158
6. Interest	0	0	0	0	0	0	0	0	0
c. Income before D & I	861,412	861,412	861,412	861,412	861,412	861,412	861,412	861,412	861,412
d. Net Income	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747
II. Cash Flow									
a. Sources of Funds	861,412	861,412	3,501,464	861,412	1,385,446	861,412	861,412	9,310,613	861,412
1. Foreign Loan									
2. Government Fund	0	0	2,610,052	0	524,035	0	0	8,449,202	0
3. Depreciation	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158
4. Net Income	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747
b. Uses of Funds	861,412	861,412	3,501,464	861,412	1,385,446	861,412	861,412	9,310,613	861,412
1. Construction									
2. Reinvestment	0	0	3,501,464	0	1,385,446	0	0	9,310,613	0
3. Foreign Loan Repayment	0	0	0	0	0	0	0	0	0
4. Government Fund Repayment	861,412	861,412	0	861,412	0	861,412	861,412	0	861,412
c. Balance of Foreign Loan at End	0	0	0	0	0	0	0	0	0
d. Balance of Gov. Fund at End	10,346,076	9,484,605	12,124,717	11,263,305	11,797,340	10,925,928	10,064,517	18,513,719	17,652,307
e. Net Cash Flow	0	0	0	0	0	0	0	0	0

TABLE 9.3 INCOME STATEMENT AND CASH FLOW OF PILOT PROJECT (1990-2024) (3/4)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
(UNIT : US\$)									
I. Income Statement									
a. Revenue	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753
1. Revenue by Transport	51,071	51,071	51,071	51,071	51,071	51,071	51,071	51,071	51,071
2. Net Sales by Plant	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238
3. Revenue by Training Vessels and Demonstration Facilities	893,443	893,443	893,443	893,443	893,443	893,443	893,443	893,443	893,443
b. Expense	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499
1. Administrative Expense	277,304	277,304	277,304	277,304	277,304	277,304	277,304	277,304	277,304
2. Expense by Transport	64,473	64,473	64,473	64,473	64,473	64,473	64,473	64,473	64,473
3. Cost of Goods Sold	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039
4. Expense by Training Vessels and Demonstration Facilities	432,526	432,526	432,526	432,526	432,526	432,526	432,526	432,526	432,526
5. Depreciation	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158
6. Interest	0	0	0	0	0	0	0	0	0
c. Income before D & I	861,412	861,412	861,412	861,412	861,412	861,412	861,412	861,412	861,412
d. Net Income	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747
II. Cash Flow									
a. Sources of Funds	861,412	1,385,446	861,412	3,501,464	861,412	861,412	861,412	1,385,446	2,502,290
1. Foreign Loan	0	524,035	0	2,640,052	0	0	0	524,035	1,640,878
2. Government Fund	0	0	0	0	0	0	0	0	0
3. Depreciation	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158
4. Net Income	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747
b. Uses of Funds	861,412	1,385,446	861,412	3,501,464	861,412	861,412	861,412	1,385,446	2,502,290
1. Construction	0	0	0	0	0	0	0	0	0
2. Reinvestment	0	1,385,446	0	3,501,464	0	0	0	1,385,446	2,502,290
3. Foreign Loan Repayment	0	0	0	0	0	0	0	0	0
4. Government Fund Repayment	861,412	0	861,412	0	861,412	861,412	861,412	0	0
c. Balance of Foreign Loan at End	0	0	0	0	0	0	0	0	0
d. Balance of Gov. Fund at End	16,790,896	17,314,930	16,453,519	19,093,571	18,232,159	17,370,748	16,509,336	17,033,371	18,674,249
e. Net Cash Flow	0	0	0	0	0	0	0	0	0

TABLE 9.3 INCOME STATEMENT AND CASH FLOW OF PILOT PROJECT (1990-2024) (4/4)

	2017	2018	2019	2020	2021	2022	2023	2024
(UNIT : US\$)								
I. Income Statement								
a. Revenue	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753	11,221,753
1. Revenue by Transport	51,071	51,071	51,071	51,071	51,071	51,071	51,071	51,071
2. Net Sales by Plant	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238	10,277,238
3. Revenue by Training Vessels and Demonstration Facilities	893,443	893,443	893,443	893,443	893,443	893,443	893,443	893,443
b. Expense	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499	11,658,499
1. Administrative Expense	277,304	277,304	277,304	277,304	277,304	277,304	277,304	277,304
2. Expense by Transport	64,473	64,473	64,473	64,473	64,473	64,473	64,473	64,473
3. Cost of Goods Sold	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039	9,586,039
4. Expense by Training Vessels and Demonstration Facilities	432,526	432,526	432,526	432,526	432,526	432,526	432,526	432,526
5. Depreciation	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158
6. Interest	0	0	0	0	0	0	0	0
c. Income before D & I	861,412	861,412	861,412	861,412	861,412	861,412	861,412	861,412
d. Net Income	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747
II. Cash Flow								
a. Sources of Funds	861,412	861,412	861,412	861,412	13,643,299	861,412	861,412	861,412
1. Foreign Loan	0	0	0	0	12,781,893	0	0	0
2. Government Fund	0	0	0	0	0	0	0	0
3. Depreciation	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158	1,298,158
4. Net Income	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747	-436,747
b. Uses of Funds	861,412	861,412	861,412	861,412	13,643,299	861,412	861,412	861,412
1. Construction	0	0	0	0	13,643,299	0	0	0
2. Reinvestment	0	0	0	0	0	0	0	0
3. Foreign Loan Repayment	0	0	0	0	0	0	0	0
4. Government Fund Repayment	861,412	861,412	861,412	861,412	0	861,412	861,412	861,412
c. Balance of Foreign Loan at End	0	0	0	0	0	0	0	0
d. Balance of Gov. Fund at End	17,812,837	16,951,426	16,090,014	15,228,603	20,910,490	27,149,079	26,287,667	25,426,256
e. Net Cash Flow	0	0	0	0	0	0	0	0

TABLE 9.4 INCOME STATEMENT AND CASH FLOW OF COMMERCIAL PROJECT (1990-2024) (1/4)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
(UNIT : US\$)									
I. Income Statement									
a. Revenue		198,343	11,812,324	15,241,261	25,716,213	26,715,356	26,715,356	26,715,356	26,715,356
1. Revenue by Transport		198,343	2,121,848	5,550,785	6,930,923	7,238,690	7,238,690	7,238,690	7,238,690
2. Net Sales by Plant		0	9,690,476	9,690,476	18,785,190	19,476,667	19,476,667	19,476,667	19,476,667
3. Revenue by Training Vessels and Demonstration Facilities		0	0	0	0	0	0	0	0
b. Expense		544,119	11,954,547	13,719,393	24,198,787	25,436,788	25,436,788	25,436,788	25,436,788
1. Administrative Expense		10,571	205,201	280,675	482,397	579,038	579,038	579,038	579,038
2. Expense by Transport		83,776	666,226	1,385,787	1,636,255	1,743,380	1,743,380	1,743,380	1,743,380
3. Cost of Goods Sold		0	8,979,271	8,979,271	17,523,021	18,092,678	18,092,678	18,092,678	18,092,678
4. Expense by Training Vessels and Demonstration Facilities		0	0	0	0	0	0	0	0
5. Depreciation		146,447	1,411,189	2,032,536	3,218,455	3,607,357	3,607,357	3,607,357	3,607,357
6. Interest		303,325	692,660	1,041,124	1,338,659	1,414,335	1,414,335	1,414,335	1,414,335
c. Income before D & I		103,996	1,861,626	4,595,528	6,074,540	6,300,261	6,300,261	6,300,261	6,300,261
d. Net Income		-345,776	-142,223	1,521,868	1,517,426	1,278,569	1,278,569	1,278,569	1,278,569
II. Cash Flow									
a. Sources of Funds	11,631,423	14,241,581	13,707,223	14,271,789	7,365,509	4,885,925	4,885,925	4,885,925	4,885,925
1. Foreign Loan	10,110,825	12,977,841	11,615,462	9,917,840	2,522,543	0	0	0	0
2. Government Fund	1,520,598	1,463,069	822,795	799,546	107,085	0	0	0	0
3. Depreciation		146,447	1,411,189	2,032,536	3,218,455	3,607,357	3,607,357	3,607,357	3,607,357
4. Net Income		-345,776	-142,223	1,521,868	1,517,426	1,278,569	1,278,569	1,278,569	1,278,569
b. Uses of Funds	11,631,423	14,241,581	13,707,223	14,271,789	7,235,635	4,713,092	0	215,606	890,742
1. Construction	11,631,423	14,241,581	12,438,257	10,717,385	2,629,628	0	0	0	0
2. Reinvestment						0	0	215,606	890,742
3. Foreign Loan Repayment						0	0	0	0
4. Government Fund Repayment		0	1,268,966	3,554,404	4,606,008	4,713,092	0	0	0
c. Balance of Foreign Loan at End	10,110,825	23,088,665	34,704,127	44,621,907	47,144,510	47,144,510	47,144,510	47,144,510	47,144,510
d. Balance of Gov. Fund at End	1,520,598	2,983,667	3,806,462	4,606,008	4,713,092	0	0	0	0
e. Net Cash Flow	0	0	0	0	129,874	302,707	5,188,032	9,858,952	13,054,136

TABLE 9.4 INCOME STATEMENT AND CASH FLOW OF COMMERCIAL PROJECT (1990-2024) (2/4)

	1999	2000	2001	2002	2003	2004	2005	2006	2007
(UNIT : US\$)									
I. Income Statement									
a. Revenue	26,715,356	26,715,356	26,715,356	26,715,356	26,715,356	26,715,356	26,715,356	26,715,356	26,715,356
1. Revenue by Transport	7,238,690	7,238,690	7,238,690	7,238,690	7,238,690	7,238,690	7,238,690	7,238,690	7,238,690
2. Net Sales by Plant	19,476,667	19,476,667	19,476,667	19,476,667	19,476,667	19,476,667	19,476,667	19,476,667	19,476,667
3. Revenue by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
b. Expense	25,436,788	25,436,788	25,396,071	25,295,354	25,224,637	25,153,920	25,083,204	25,012,487	24,941,770
1. Administrative Expense	579,038	579,038	579,038	579,038	579,038	579,038	579,038	579,038	579,038
2. Expense by Transport	1,743,380	1,743,380	1,743,380	1,743,380	1,743,380	1,743,380	1,743,380	1,743,380	1,743,380
3. Cost of Goods Sold	18,092,678	18,092,678	18,092,678	18,092,678	18,092,678	18,092,678	18,092,678	18,092,678	18,092,678
4. Expense by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
5. Depreciation	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357
6. Interest	1,414,335	1,414,335	1,343,619	1,272,902	1,202,185	1,131,468	1,060,751	990,035	919,318
c. Income before D & I	6,300,261	6,300,261	6,300,261	6,300,261	6,300,261	6,300,261	6,300,261	6,300,261	6,300,261
d. Net Income	1,278,569	1,278,569	1,349,285	1,420,002	1,490,719	1,561,436	1,632,152	1,702,869	1,773,586
II. Cash Flow									
a. Sources of Funds	4,885,925	4,885,925	4,956,642	5,027,359	5,098,076	5,168,793	5,239,509	5,310,226	5,380,943
1. Foreign Loan									
2. Government Fund	0	0	0	0	0	0	0	0	0
3. Depreciation	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357
4. Net Income	1,278,569	1,278,569	1,349,285	1,420,002	1,490,719	1,561,436	1,632,152	1,702,869	1,773,586
b. Uses of Funds	685,559	3,528,910	3,771,164	4,406,505	2,679,828	2,848,030	4,358,588	3,624,164	15,259,478
1. Construction									
2. Reinvestment	685,559	1,169,685	1,413,939	2,049,280	322,602	5,490,805	2,001,362	1,266,919	12,902,253
3. Foreign Loan Repayment	0	2,357,225	2,357,225	2,357,225	2,357,225	2,357,225	2,357,225	2,357,225	2,357,225
4. Government Fund Repayment	0	0	0	0	0	0	0	0	0
c. Balance of Foreign Loan at End	47,144,510	44,787,221	42,430,059	40,072,833	37,715,609	35,358,392	33,001,157	30,643,911	28,286,706
d. Balance of Gov. Fund at End	0	0	0	0	0	0	0	0	0
e. Net Cash Flow	18,054,502	19,413,517	20,598,995	21,218,819	23,618,097	20,958,059	21,819,701	23,525,013	13,647,307

TABLE 9.4 INCOME STATEMENT AND CASH FLOW OF COMMERCIAL PROJECT (1990-2024) (3/4)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
(UNIT : US\$)									
I. Income Statement									
a. Revenue	26,715,356	26,715,356	26,715,356	26,715,356	26,715,356	26,715,356	26,715,356	26,715,356	26,715,356
1. Revenue by Transport	7,238,690	7,238,690	7,238,690	7,238,690	7,238,690	7,238,690	7,238,690	7,238,690	7,238,690
2. Net Sales by Plant	19,476,667	19,476,667	19,476,667	19,476,667	19,476,667	19,476,667	19,476,667	19,476,667	19,476,667
3. Revenue by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
b. Expense	24,871,053	24,800,337	24,729,620	24,658,903	24,588,186	24,517,470	24,446,753	24,376,036	24,305,319
1. Administrative Expense	579,038	579,038	579,038	579,038	579,038	579,038	579,038	579,038	579,038
2. Expense by Transport	1,743,380	1,743,380	1,743,380	1,743,380	1,743,380	1,743,380	1,743,380	1,743,380	1,743,380
3. Cost of Goods Sold	18,092,678	18,092,678	18,092,678	18,092,678	18,092,678	18,092,678	18,092,678	18,092,678	18,092,678
4. Expense by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
5. Depreciation	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357
6. Interest	848,601	777,884	707,168	636,451	565,734	495,017	424,301	353,584	282,867
c. Income before D & I	6,300,261	6,300,261	6,300,261	6,300,261	6,300,261	6,300,261	6,300,261	6,300,261	6,300,261
d. Net Income	1,844,303	1,915,020	1,985,736	2,056,453	2,127,170	2,197,887	2,268,603	2,339,320	2,410,037
II. Cash Flow									
a. Sources of Funds	5,451,000	5,522,376	5,593,752	5,665,128	5,736,504	5,807,880	5,879,256	5,950,632	6,022,008
1. Foreign Loan	0	0	0	0	0	0	0	0	0
2. Government Fund	0	0	0	0	0	0	0	0	0
3. Depreciation	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357
4. Net Income	1,844,303	1,915,020	1,985,736	2,056,453	2,127,170	2,197,887	2,268,603	2,339,320	2,410,037
b. Uses of Funds	9,523,906	9,083,603	8,643,300	8,203,007	7,762,714	7,322,421	6,882,128	6,441,835	6,001,542
1. Construction	7,166,641	6,726,437	6,286,233	5,846,029	5,405,825	4,965,621	4,525,417	4,085,213	3,645,009
2. Reinvestment	0	0	0	0	0	0	0	0	0
3. Foreign Loan Repayment	2,357,225	2,357,225	2,357,225	2,357,225	2,357,225	2,357,225	2,357,225	2,357,225	2,357,225
4. Government Fund Repayment	0	0	0	0	0	0	0	0	0
c. Balance of Foreign Loan at End	25,929,480	23,572,255	21,215,029	18,857,804	16,500,578	14,143,353	11,786,127	9,428,902	7,071,676
d. Balance of Gov. Fund at End	0	0	0	0	0	0	0	0	0
e. Net Cash Flow	9,575,061	6,013,774	6,044,896	7,625,622	7,783,959	10,751,311	9,670,003	11,728,045	14,497,471

TABLE 9.4 INCOME STATEMENT AND CASH FLOW OF COMMERCIAL PROJECT (1990-2024) (4/4)

	2017	2018	2019	2020	2021	2022	2023	2024
(UNIT : US\$)								
I. Income Statement								
a. Revenue	26,715,356	26,715,356	26,715,356	26,715,356	26,715,356	26,715,356	26,715,356	26,715,356
1. Revenue by Transport	7,238,690	7,238,690	7,238,690	7,238,690	7,238,690	7,238,690	7,238,690	7,238,690
2. Net Sales by Plant	19,476,667	19,476,667	19,476,667	19,476,667	19,476,667	19,476,667	19,476,667	19,476,667
3. Revenue by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0
b. Expense	24,234,603	24,163,886	24,093,169	24,022,452	24,022,452	24,022,452	24,022,452	24,022,452
1. Administrative Expense	579,038	579,038	579,038	579,038	579,038	579,038	579,038	579,038
2. Expense by Transport	1,743,380	1,743,380	1,743,380	1,743,380	1,743,380	1,743,380	1,743,380	1,743,380
3. Cost of Goods Sold	18,092,678	18,092,678	18,092,678	18,092,678	18,092,678	18,092,678	18,092,678	18,092,678
4. Expense by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0
5. Depreciation	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357
6. Interest	212,150	141,434	70,717	0	0	0	0	0
c. Income before D & I	6,300,261	6,300,261	6,300,261	6,300,261	6,300,261	6,300,261	6,300,261	6,300,261
d. Net Income	2,480,754	2,551,470	2,622,187	2,692,904	2,692,904	2,692,904	2,692,904	2,692,904
II. Cash Flow								
a. Sources of Funds	6,088,110	6,158,827	6,229,544	6,300,261	6,300,261	6,300,261	6,300,261	6,300,261
1. Foreign Loan	0	0	0	0	0	0	0	0
2. Government Fund	0	0	0	0	0	0	0	0
3. Depreciation	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357	3,607,357
4. Net Income	2,480,754	2,551,470	2,622,187	2,692,904	2,692,904	2,692,904	2,692,904	2,692,904
b. Uses of Funds	4,945,713	3,992,135	3,150,618	1,019,469	1,353,149	15,468,625	7,959,236	12,280,580
1. Construction	2,588,497	1,634,910	2,796,393	1,019,469	1,353,149	15,468,625	7,959,236	12,280,580
2. Reinvestment	0	0	0	0	0	0	0	0
3. Foreign Loan Repayment	2,357,225	2,357,225	2,357,225	0	0	0	0	0
4. Government Fund Repayment	0	0	0	0	0	0	0	0
c. Balance of Foreign Loan at End	4,714,451	2,357,225	0	0	0	0	0	0
d. Balance of Gov. Fund at End	0	0	0	0	0	0	0	0
e. Net Cash Flow	15,639,869	17,806,561	18,832,487	24,163,279	29,110,391	19,942,027	18,243,052	12,302,733

TABLE 9.5 INCOME STATEMENT AND CASH FLOW OF ZONE 1 (1990-2024) (1/4)

	(UNIT : US\$)									
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
I. Income Statement										
a. Revenue		0	0	0	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952
1. Revenue by Transport		0	0	0	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238
2. Net Sales by Plant		0	0	0	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714
3. Revenue by Training Vessels and Demonstration Facilities		0	0	0	0	0	0	0	0	0
b. Expense		0	0	221,859	10,625,577	10,625,577	10,625,577	10,625,577	10,625,577	10,625,577
1. Administrative Expense		0	0	0	201,722	201,722	201,722	201,722	201,722	201,722
2. Expense by Transport		0	0	0	250,468	250,468	250,468	250,468	250,468	250,468
3. Cost of Goods Sold		0	0	0	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750
4. Expense by Training Vessels and Demonstration Facilities		0	0	0	0	0	0	0	0	0
5. Depreciation		0	0	0	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919
6. Interest		0	0	221,859	443,718	443,718	443,718	443,718	443,718	443,718
c. Income before D & I		0	0	0	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013
d. Net Income		0	0	-221,859	-150,624	-150,624	-150,624	-150,624	-150,624	-150,624
II. Cash Flow										
a. Sources of Funds	0	0	8,087,758	8,087,758	1,035,295	1,035,295	1,035,295	1,035,295	1,035,295	1,035,295
1. Foreign Loan	0	0	7,395,297	7,395,297	0	0	0	0	0	0
2. Government Fund	0	0	692,461	692,461	0	0	0	0	0	0
3. Depreciation	0	0	0	0	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919
4. Net Income	0	0	0	0	-150,624	-150,624	-150,624	-150,624	-150,624	-150,624
b. Uses of Funds	0	0	8,087,758	8,087,758	1,035,295	349,627	0	0	0	0
1. Construction	0	0	8,087,758	8,087,758	0	0	0	0	0	0
2. Reinvestment	0	0	0	0	0	0	0	0	0	0
3. Foreign Loan Repayment	0	0	0	0	1,035,295	349,627	0	0	0	0
4. Government Fund Repayment	0	0	0	0	0	0	0	0	0	0
c. Balance of Foreign Loan at End	0	0	7,395,297	14,790,594	14,790,594	14,790,594	14,790,594	14,790,594	14,790,594	14,790,594
d. Balance of Gov. Fund at End	0	0	692,461	1,384,922	349,627	0	0	0	0	0
e. Net Cash Flow	0	0	0	0	0	685,668	1,720,663	2,756,258	3,791,552	

TABLE 9.5 INCOME STATEMENT AND CASH FLOW OF ZONE 1 (1990-2024) (2/4)

	(UNIT : US\$)									
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
I. Income Statement										
a. Revenue	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952
1. Revenue by Transport	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238
2. Net Sales by Plant	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714
3. Revenue by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0	0
b. Expense	10,625,577	10,625,577	10,625,577	10,625,577	10,603,391	10,581,265	10,559,019	10,536,833	10,514,647	10,492,461
1. Administrative Expense	201,722	201,722	201,722	201,722	201,722	201,722	201,722	201,722	201,722	201,722
2. Expense by Transport	250,468	250,468	250,468	250,468	250,468	250,468	250,468	250,468	250,468	250,468
3. Cost of Goods Sold	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750
4. Expense by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0	0
5. Depreciation	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919
6. Interest	443,718	443,718	443,718	443,718	421,532	399,346	377,160	354,974	332,788	310,602
c. Income before D & I	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013
d. Net Income	-150,624	-150,624	-150,624	-150,624	-128,438	-106,252	-84,067	-61,881	-39,695	-17,449
II. Cash Flow										
a. Sources of Funds	1,035,295	1,035,295	1,035,295	1,035,295	1,057,481	1,079,667	1,101,852	1,124,038	1,146,224	1,168,409
1. Foreign Loan	0	0	0	0	0	0	0	0	0	0
2. Government Fund	0	0	0	0	0	0	0	0	0	0
3. Depreciation	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919
4. Net Income	-150,624	-150,624	-150,624	-150,624	-128,438	-106,252	-84,067	-61,881	-39,695	-17,449
b. Uses of Funds	0	1,169,685	0	0	739,530	739,530	5,339,593	739,530	1,909,215	739,530
1. Construction	0	1,169,685	0	0	0	0	4,600,063	0	1,169,685	0
2. Reinvestment	0	0	0	0	0	0	739,530	0	739,530	0
3. Foreign Loan Repayment	0	0	0	739,530	739,530	0	0	0	0	0
4. Government Fund Repayment	0	0	0	0	0	0	0	0	0	0
c. Balance of Foreign Loan at End	14,790,594	14,790,594	14,790,594	14,051,064	13,311,534	12,572,005	11,832,475	11,092,945	10,353,416	9,613,886
d. Balance of Gov. Fund at End	0	0	0	0	0	0	0	0	0	0
e. Net Cash Flow	4,826,847	4,692,457	5,727,752	6,023,517	6,341,468	2,081,541	2,443,864	1,658,683	2,065,383	2,480,929

TABLE 9.5 INCOME STATEMENT AND CASH FLOW OF ZONE 1 (1990-2024) (3/4)

	2017	2018	2019	2020	2021	2022	2023	2024
(UNIT : US\$)								
I. Income Statement								
a. Revenue	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952
1. Revenue by Transport	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238
2. Net Sales by Plant	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714
3. Revenue by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0
b. Expense	10,292,788	10,270,602	10,248,416	10,226,231	10,204,045	10,181,859	10,181,859	10,181,859
1. Administrative Expense	201,722	201,722	201,722	201,722	201,722	201,722	201,722	201,722
2. Expense by Transport	250,468	250,468	250,468	250,468	250,468	250,468	250,468	250,468
3. Cost of Goods Sold	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750
4. Expense by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0
5. Depreciation	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919
6. Interest	110,929	88,744	66,558	44,372	22,186	-0	-0	-0
c. Income before D & I	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013
d. Net Income	182,164	204,350	226,536	248,722	270,908	293,094	293,094	293,094
II. Cash Flow								
a. Sources of Funds	1,368,083	1,909,215	3,162,273	1,434,641	1,456,827	1,479,013	1,479,013	12,280,580
1. Foreign Loan	0	0	0	0	0	0	0	10,801,567
2. Government Fund	0	518,946	1,749,818	0	0	0	0	0
3. Depreciation	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919
4. Net Income	182,164	204,350	226,536	248,722	270,908	293,094	293,094	293,094
b. Uses of Funds	1,368,083	1,909,215	3,162,273	1,434,641	1,456,827	1,479,013	1,479,013	12,280,580
1. Construction	0	0	0	0	0	0	0	12,280,580
2. Reinvestment	0	1,169,685	2,422,743	0	0	0	0	0
3. Foreign Loan Repayment	739,530	739,530	739,530	739,530	739,530	0	0	0
4. Government Fund Repayment	628,553	0	0	695,111	717,297	1,479,013	1,479,013	0
c. Balance of Foreign Loan at End	2,958,119	2,218,589	1,479,059	739,530	-0	-0	-0	-0
d. Balance of Gov. Fund at End	4,928,028	5,446,973	7,196,791	6,501,680	5,784,383	4,305,370	2,828,358	13,627,925
e. Net Cash Flow	0	0	0	0	0	0	0	0

TABLE 9.5 INCOME STATEMENT AND CASH FLOW OF ZONE 1 (1990-2024) (4/4)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
(UNIT : US\$)									
I. Income Statement									
a. Revenue	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952	10,474,952
1. Revenue by Transport	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238	1,379,238
2. Net Sales by Plant	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714	9,095,714
3. Revenue by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
b. Expense	10,492,461	10,470,275	10,448,089	10,425,904	10,403,718	10,381,532	10,359,346	10,337,160	10,314,974
1. Administrative Expense	201,722	201,722	201,722	201,722	201,722	201,722	201,722	201,722	201,722
2. Expense by Transport	250,468	250,468	250,468	250,468	250,468	250,468	250,468	250,468	250,468
3. Cost of Goods Sold	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750	8,543,750
4. Expense by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
5. Depreciation	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919
6. Interest	310,602	288,417	286,231	244,045	221,859	199,673	177,487	155,301	133,115
c. Income before D & I	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013	1,479,013
d. Net Income	-17,509	4,677	26,863	49,049	71,215	93,421	115,607	137,792	159,978
II. Cash Flow									
a. Sources of Funds	1,168,410	4,756,098	1,212,782	1,234,968	1,909,215	1,279,340	5,339,593	1,323,711	1,345,897
1. Foreign Loan	0	0	0	0	652,061	0	4,038,067	0	0
2. Government Fund	0	3,565,502	0	0	0	0	0	0	0
3. Depreciation	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919	1,185,919
4. Net Income	-17,509	4,677	26,863	49,049	71,215	93,421	115,607	137,792	159,978
b. Uses of Funds	739,530	7,250,361	1,212,782	1,234,968	1,909,215	1,279,340	5,339,593	1,323,711	1,345,897
1. Construction	0	0	0	0	0	0	0	0	0
2. Reinvestment	0	6,510,832	0	0	1,169,685	0	4,600,063	0	0
3. Foreign Loan Repayment	739,530	739,530	739,530	739,530	739,530	739,530	739,530	739,530	739,530
4. Government Fund Repayment	0	0	473,252	495,438	0	539,810	0	584,182	606,368
c. Balance of Foreign Loan at End	9,613,886	8,874,356	8,134,827	7,395,297	6,655,767	5,916,237	5,176,708	4,437,178	3,697,648
d. Balance of Gov. Fund at End	0	3,565,502	3,092,250	2,596,812	3,248,873	2,709,063	6,747,130	6,162,949	5,556,581
e. Net Cash Flow	2,494,263	-0	-0	-0	-0	-0	-0	-0	-0

TABLE 9.6 INCOME STATEMENT AND CASH FLOW OF ZONE 2 (1990-2024) (1/4)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
(UNIT : US\$)									
I. Income Statement									
a. Revenue		0	0	0	0	999,143	999,143	999,143	999,143
1. Revenue by Transport		0	0	0	0	308,667	308,667	308,667	308,667
2. Net Sales by Plant		0	0	0	0	690,476	690,476	690,476	690,476
3. Revenue by Training Vessels and Demonstration Facilities		0	0	0	0	0	0	0	0
b. Expense		0	0	0	75,676	1,313,677	1,313,677	1,313,677	1,313,677
1. Administrative Expense		0	0	0	0	96,641	96,641	96,641	96,641
2. Expense by Transport		0	0	0	0	107,125	107,125	107,125	107,125
3. Cost of Goods Sold		0	0	0	0	569,657	569,657	569,657	569,657
4. Expense by Training Vessels and Demonstration Facilities		0	0	0	0	0	0	0	0
5. Depreciation		0	0	0	0	388,902	388,902	388,902	388,902
6. Interest		0	0	0	75,676	151,353	151,353	151,353	151,353
c. Income before D & I		0	0	0	0	225,720	225,720	225,720	225,720
d. Net Income		0	0	0	-75,676	-314,534	-314,534	-314,534	-314,534
II. Cash Flow									
a. Sources of Funds	0	0	0	2,629,628	2,629,628	74,368	74,368	74,368	74,368
1. Foreign Loan	0	0	0	2,522,543	2,522,543	0	0	0	0
2. Government Fund	0	0	0	107,085	107,085	0	0	0	0
3. Depreciation	0	0	0	0	0	388,902	388,902	388,902	388,902
4. Net Income	0	0	0	0	0	-314,534	-314,534	-314,534	-314,534
b. Uses of Funds	0	0	0	2,629,628	2,629,628	74,368	74,368	65,434	0
1. Construction	0	0	0	2,629,628	2,629,628	0	0	0	0
2. Reinvestment	0	0	0	0	0	0	0	0	0
3. Foreign Loan Repayment	0	0	0	0	0	74,368	74,368	65,434	0
4. Government Fund Repayment	0	0	0	0	0	0	0	0	0
c. Balance of Foreign Loan at End	0	0	0	2,522,543	5,045,086	5,045,086	5,045,086	5,045,086	5,045,086
d. Balance of Gov. Fund at End	0	0	0	107,085	214,170	139,802	65,434	0	0
e. Net Cash Flow	0	0	0	0	0	0	0	8,934	83,301

TABLE 9.6 INCOME STATEMENT AND CASH FLOW OF ZONE 2 (1990-2024) (2/4)

	1999	2000	2001	2002	2003	2004	2005	2006	2007
(UNIT : US\$)									
I. Income Statement									
a. Revenue	999,143	999,143	999,143	999,143	999,143	999,143	999,143	999,143	999,143
1. Revenue by Transport	308,667	308,667	308,667	308,667	308,667	308,667	308,667	308,667	308,667
2. Net Sales by Plant	690,476	690,476	690,476	690,476	690,476	690,476	690,476	690,476	690,476
3. Revenue by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
b. Expense	1,313,677	1,313,677	1,313,677	1,313,677	1,313,677	1,308,109	1,298,541	1,290,974	1,283,406
1. Administrative Expense	96,641	96,641	96,641	96,641	96,641	96,641	96,641	96,641	96,641
2. Expense by Transport	107,125	107,125	107,125	107,125	107,125	107,125	107,125	107,125	107,125
3. Cost of Goods Sold	569,657	569,657	569,657	569,657	569,657	569,657	569,657	569,657	569,657
4. Expense by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
5. Depreciation	388,902	388,902	388,902	388,902	388,902	388,902	388,902	388,902	388,902
6. Interest	151,353	151,353	151,353	151,353	151,353	143,785	136,217	128,650	121,082
c. Income before D & I	225,720	225,720	225,720	225,720	225,720	225,720	225,720	225,720	225,720
d. Net Income	-314,534	-314,534	-314,534	-314,534	-314,534	-306,966	-299,399	-291,831	-284,263
II. Cash Flow									
a. Sources of Funds	74,368	74,368	141,613	74,368	245,131	252,254	1,568,057	252,254	625,904
1. Foreign Loan	0	0	57,245	0	170,764	170,319	1,478,554	155,184	521,266
2. Government Fund	0	0	0	0	0	0	0	0	0
3. Depreciation	388,902	388,902	388,902	388,902	388,902	388,902	388,902	388,902	388,902
4. Net Income	-314,534	-314,534	-314,534	-314,534	-314,534	-306,966	-299,399	-291,831	-284,263
b. Uses of Funds	0	0	373,650	67,245	252,254	252,254	1,568,057	252,254	625,904
1. Construction	0	0	373,650	0	0	0	1,315,803	0	373,650
2. Reinvestment	0	0	0	0	0	0	0	0	0
3. Foreign Loan Repayment	0	0	0	0	252,254	252,254	252,254	252,254	252,254
4. Government Fund Repayment	0	0	0	67,245	0	0	0	0	0
c. Balance of Foreign Loan at End	5,045,086	5,045,086	5,045,086	5,045,086	4,792,831	4,540,577	4,288,323	4,036,068	3,783,814
d. Balance of Gov. Fund at End	0	0	67,245	0	170,764	341,083	1,819,637	1,974,821	2,496,066
e. Net Cash Flow	157,669	232,037	0	7,123	0	0	0	0	0

TABLE 9.6 INCOME STATEMENT AND CASH FLOW OF ZONE 2 (1990-2024) (3/4)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
(UNIT : US\$)									
I. Income Statement									
a. Revenue	999,143	999,143	999,143	999,143	999,143	999,143	999,143	999,143	999,143
1. Revenue by Transport	308,667	308,667	308,667	308,667	308,667	308,667	308,667	308,667	308,667
2. Net Sales by Plant	690,476	690,476	690,476	690,476	690,476	690,476	690,476	690,476	690,476
3. Revenue by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
b. Expense	1,275,839	1,268,271	1,260,703	1,253,136	1,245,568	1,238,000	1,230,433	1,222,865	1,215,298
1. Administrative Expense	96,641	96,641	96,641	96,641	96,641	96,641	96,641	96,641	96,641
2. Expense by Transport	107,125	107,125	107,125	107,125	107,125	107,125	107,125	107,125	107,125
3. Cost of Goods Sold	569,657	569,657	569,657	569,657	569,657	569,657	569,657	569,657	569,657
4. Expense by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
5. Depreciation	388,902	388,902	388,902	388,902	388,902	388,902	388,902	388,902	388,902
6. Interest	113,514	105,947	98,379	90,812	83,244	75,676	68,109	60,541	52,973
c. Income before I & I	225,720	225,720	225,720	225,720	225,720	225,720	225,720	225,720	225,720
d. Net Income	-276,696	-269,128	-261,560	-253,993	-246,425	-238,858	-231,290	-223,722	-216,155
II. Cash Flow									
a. Sources of Funds	252,254	252,254	2,566,268	252,254	252,254	625,904	252,254	1,568,057	252,254
1. Foreign Loan									
2. Government Fund	140,048	132,481	2,438,927	117,345	109,778	475,860	94,643	1,402,878	79,507
3. Depreciation	388,902	388,902	388,902	388,902	388,902	388,902	388,902	388,902	388,902
4. Net Income	-276,696	-269,128	-261,560	-253,993	-246,425	-238,858	-231,290	-223,722	-216,155
b. Uses of Funds	252,254	252,254	2,566,268	252,254	252,254	625,904	252,254	1,568,057	252,254
1. Construction									
2. Reinvestment	0	0	2,314,014	0	0	373,650	0	1,315,803	0
3. Foreign Loan Repayment	252,254	252,254	252,254	252,254	252,254	252,254	252,254	252,254	252,254
4. Government Fund Repayment	0	0	0	0	0	0	0	0	0
c. Balance of Foreign Loan at End	3,531,560	3,279,306	3,027,051	2,774,797	2,522,543	2,270,289	2,018,034	1,765,780	1,513,526
d. Balance of Gov. Fund at End	2,636,135	2,768,616	5,207,543	5,324,888	5,434,666	5,910,526	6,005,169	7,408,047	7,487,551
e. Net Cash Flow	0	0	0	0	0	0	0	0	0

TABLE 9.6 INCOME STATEMENT AND CASH FLOW OF ZONE 2 (1990-2024) (4/4)

	2017	2018	2019	2020	2021	2022	2023	2024
(UNIT : US\$)								
I. Income Statement								
a. Revenue	999,143	999,143	999,143	999,143	999,143	999,143	999,143	999,143
1. Revenue by Transport	308,667	308,667	308,667	308,667	308,667	308,667	308,667	308,667
2. Net Sales by Plant	690,476	690,476	690,476	690,476	690,476	690,476	690,476	690,476
3. Revenue by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0
b. Expense	1,207,730	1,200,162	1,192,595	1,185,027	1,177,459	1,169,892	1,162,324	1,154,756
1. Administrative Expense	96,641	96,641	96,641	96,641	96,641	96,641	96,641	96,641
2. Expense by Transport	107,125	107,125	107,125	107,125	107,125	107,125	107,125	107,125
3. Cost of Goods Sold	569,657	569,657	569,657	569,657	569,657	569,657	569,657	569,657
4. Expense by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0
5. Depreciation	388,902	388,902	388,902	388,902	388,902	388,902	388,902	388,902
6. Interest	45,406	37,838	30,271	22,703	15,135	7,568	-0	-0
c. Income before D & I	225,720	225,720	225,720	225,720	225,720	225,720	225,720	225,720
d. Net Income	-208,587	-201,019	-193,452	-185,884	-178,317	-170,749	-163,181	-155,613
II. Cash Flow								
a. Sources of Funds	252,254	252,254	625,904	1,271,723	252,254	252,254	225,720	225,720
1. Foreign Loan								
2. Government Fund	71,940	64,372	430,454	1,088,706	41,699	34,102	0	0
3. Depreciation	388,902	388,902	388,902	388,902	388,902	388,902	388,902	388,902
4. Net Income	-208,587	-201,019	-193,452	-185,884	-178,317	-170,749	-163,181	-155,613
b. Uses of Funds	252,254	252,254	625,904	1,271,723	252,254	252,254	225,720	225,720
1. Construction								
2. Reinvestment	0	0	373,650	1,019,469	0	0	0	0
3. Foreign Loan Repayment	252,254	252,254	252,254	252,254	252,254	252,254	225,720	225,720
4. Government Fund Repayment	0	0	0	0	0	0	-0	-0
c. Balance of Foreign Loan at End	1,261,271	1,099,017	756,763	504,509	252,254	-0	-0	-0
d. Balance of Gov. Fund at End	7,559,494	7,623,866	8,054,320	9,123,026	9,184,695	9,198,797	8,973,076	8,747,356
e. Net Cash Flow	0	0	0	0	0	0	0	0

TABLE 9.7 INCOME STATEMENT AND CASH FLOW OF ZONE 3 (1990-2024) (1/4)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
(UNIT : US\$)									
I. Income Statement									
a. Revenue		0	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981
1. Revenue by Transport		0	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505
2. Net Sales by Plant		0	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476
3. Revenue by Training Vessels and Demonstration Facilities		0	0	0	0	0	0	0	0
b. Expense		262,730	11,546,554	11,546,554	11,546,554	11,546,554	11,546,554	11,546,554	11,546,554
1. Administrative Expense		0	194,630	194,630	194,630	194,630	194,630	194,630	194,630
2. Expense by Transport		0	582,450	582,450	582,450	582,450	582,450	582,450	582,450
3. Cost of Goods Sold		0	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271
4. Expense by Training Vessels and Demonstration Facilities		0	0	0	0	0	0	0	0
5. Depreciation		0	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742
6. Interest		262,730	525,461	525,461	525,461	525,461	525,461	525,461	525,461
c. Income before D & I		0	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630
d. Net Income		-262,730	67,427	67,427	67,427	67,427	67,427	67,427	67,427
II. Cash Flow									
a. Sources of Funds	9,891,081	9,891,081	1,332,170	1,332,170	1,332,170	1,332,170	1,332,170	1,332,170	1,332,170
1. Foreign Loan	8,757,676	8,757,676	0	0	0	0	0	0	0
2. Government Fund	1,133,406	1,133,406	0	0	0	0	0	0	0
3. Depreciation		0	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742
4. Net Income		0	67,427	67,427	67,427	67,427	67,427	67,427	67,427
b. Uses of Funds	9,891,081	9,891,081	1,332,170	934,642	0	0	0	0	890,742
1. Construction	9,891,081	9,891,081	0	0	0	0	0	0	890,742
2. Reinvestment		0	0	0	0	0	0	0	0
3. Foreign Loan Repayment		0	1,332,170	934,642	0	0	0	0	0
4. Government Fund Repayment		0	0	0	0	0	0	0	0
c. Balance of Foreign Loan at End	8,757,676	17,515,351	17,515,351	17,515,351	17,515,351	17,515,351	17,515,351	17,515,351	17,515,351
d. Balance of Gov. Fund at End	1,133,406	2,266,811	934,642	0	0	0	0	0	0
e. Net Cash Flow	0	0	0	397,528	1,729,698	3,061,867	4,394,037	5,726,206	6,167,634

TABLE 9.7 INCOME STATEMENT AND CASH FLOW OF ZONE 3 (1990-2024) (2/4)

	1999	2000	2001	2002	2003	2004	2005	2006	2007
(UNIT : US\$)									
I. Income Statement									
a. Revenue	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981
1. Revenue by Transport	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505
2. Net Sales by Plant	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476
3. Revenue by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
b. Expense	11,546,554	11,546,554	11,520,281	11,494,008	11,467,734	11,441,461	11,415,188	11,388,915	11,362,642
1. Administrative Expense	194,630	194,630	194,630	194,630	194,630	194,630	194,630	194,630	194,630
2. Expense by Transport	582,450	582,450	582,450	582,450	582,450	582,450	582,450	582,450	582,450
3. Cost of Goods Sold	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271
4. Expense by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
5. Depreciation	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742
6. Interest	525,461	525,461	499,188	472,914	446,641	420,368	394,095	367,822	341,549
c. Income before D & I	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630
d. Net Income	67,427	67,427	93,700	119,973	146,246	172,520	198,793	225,066	251,339
II. Cash Flow									
a. Sources of Funds	1,332,170	1,332,170	1,358,443	1,384,716	1,410,989	1,437,262	1,463,535	1,489,808	5,098,040
1. Foreign Loan		0	0	0	0	0	0	0	3,581,959
2. Government Fund	0	0	0	0	0	0	0	0	0
3. Depreciation	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742
4. Net Income	67,427	67,427	93,700	119,973	146,246	172,520	198,793	225,066	251,339
b. Uses of Funds	0	875,768	875,768	2,925,047	875,768	1,766,509	875,768	875,768	13,404,371
1. Construction		0	0	2,049,280	0	890,742	0	0	12,528,603
2. Reinvestment	0	0	0	0	0	0	0	0	0
3. Foreign Loan Repayment	0	875,768	875,768	875,768	875,768	875,768	875,768	875,768	875,768
4. Government Fund Repayment	0	0	0	0	0	0	0	0	0
c. Balance of Foreign Loan at End	17,515,351	16,639,584	15,763,816	14,888,049	14,012,281	13,136,513	12,260,746	11,384,978	10,509,211
d. Balance of Gov. Fund at End	0	0	0	0	0	0	0	0	3,581,959
e. Net Cash Flow	7,499,804	7,956,206	8,438,881	6,898,550	7,433,771	7,104,523	7,692,291	8,306,331	0

TABLE 9.7 INCOME STATEMENT AND CASH FLOW OF ZONE 3 (1990-2024) (3/4)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
(UNIT : US\$)									
I. Income Statement									
a. Revenue	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981
1. Revenue by Transport	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505
2. Net Sales by Plant	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476
3. Revenue by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
b. Expense	11,316,369	11,310,096	11,283,823	11,257,550	11,231,277	11,205,004	11,178,731	11,152,458	11,126,185
1. Administrative Expense	194,630	194,630	194,630	194,630	194,630	194,630	194,630	194,630	194,630
2. Expense by Transport	582,450	582,450	582,450	582,450	582,450	582,450	582,450	582,450	582,450
3. Cost of Goods Sold	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271
4. Expense by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
5. Depreciation	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742
6. Interest	315,276	289,003	262,730	236,457	210,184	183,911	157,638	131,365	105,092
c. Income before D & I	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630
d. Net Income	277,612	303,885	330,158	356,431	382,704	408,977	435,250	461,523	487,796
II. Cash Flow									
a. Sources of Funds	1,542,354	1,568,627	1,766,509	1,621,173	2,925,047	1,673,719	1,699,992	1,726,265	1,766,509
1. Foreign Loan	0	0	171,609	0	1,277,601	0	0	0	13,971
2. Government Fund	0	0	0	0	0	0	0	0	0
3. Depreciation	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742
4. Net Income	277,612	303,885	330,158	356,431	382,704	408,977	435,250	461,523	487,796
b. Uses of Funds	1,542,354	1,568,627	1,766,509	1,621,173	2,925,047	1,673,719	1,699,992	1,726,265	1,766,509
1. Construction	0	0	890,742	0	2,049,280	0	0	0	890,742
2. Reinvestment	0	0	0	0	0	0	0	0	0
3. Foreign Loan Repayment	875,768	875,768	875,768	875,768	875,768	875,768	875,768	875,768	875,768
4. Government Fund Repayment	666,586	692,859	0	745,405	0	797,951	824,221	850,497	0
c. Balance of Foreign Loan at End	9,633,443	8,757,676	7,881,908	7,006,141	6,130,373	5,254,605	4,378,838	3,503,070	2,627,303
d. Balance of Gov. Fund at End	2,915,373	2,222,513	2,394,123	1,648,717	2,926,319	2,128,387	1,304,143	453,615	467,616
e. Net Cash Flow	0	0	0	0	0	0	0	0	0

TABLE 9.7 INCOME STATEMENT AND CASH FLOW OF ZONE 3 (1990-2024) (4/4)

	2017	2018	2019	2020	2021	2022	2023	2024
(UNIT : US\$)								
I. Income Statement								
a. Revenue	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981	11,613,981
1. Revenue by Transport	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505	1,923,505
2. Net Sales by Plant	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476	9,690,476
3. Revenue by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0
b. Expense	11,099,912	11,073,639	11,047,366	11,021,093	11,021,093	11,021,093	11,021,093	11,021,093
1. Administrative Expense	194,630	194,630	194,630	194,630	194,630	194,630	194,630	194,630
2. Expense by Transport	582,450	582,450	582,450	582,450	582,450	582,450	582,450	582,450
3. Cost of Goods Sold	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271	8,979,271
4. Expense by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0
5. Depreciation	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742
6. Interest	78,819	52,516	26,273	-0	-0	-0	-0	-0
c. Income before D & I	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630	1,857,630
d. Net Income	514,069	540,342	566,615	592,888	592,888	592,888	592,888	592,888
II. Cash Flow								
a. Sources of Funds	2,778,696	1,805,084	1,831,357	1,857,630	1,857,630	11,335,959	1,857,630	1,857,630
1. Foreign Loan	0	0	0	0	0	9,478,329	0	0
2. Government Fund	999,885	0	0	0	0	0	0	0
3. Depreciation	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742	1,264,742
4. Net Income	514,069	540,342	566,615	592,888	592,888	592,888	592,888	592,888
b. Uses of Funds	2,778,696	1,805,084	1,413,952	0	0	15,468,625	1,857,630	1,857,630
1. Construction	0	0	0	0	0	15,468,625	0	0
2. Reinvestment	1,902,928	0	0	0	0	0	0	0
3. Foreign Loan Repayment	875,768	875,768	875,768	0	0	0	0	0
4. Government Fund Repayment	0	929,317	538,184	0	0	0	1,857,630	1,857,630
c. Balance of Foreign Loan at End	1,751,535	875,768	-0	-0	-0	-0	-0	-0
d. Balance of Gov. Fund at End	1,467,501	538,184	0	0	0	9,478,329	7,620,699	5,763,068
e. Net Cash Flow	0	0	417,405	2,275,035	4,132,666	-0	-0	-0

TABLE 9.8 INCOME STATEMENT AND CASH FLOW OF ZONE 6 (1990-2024) (1/4)

(UNIT : US\$)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
I. Income Statement									
a. Revenue		0	0	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937
1. Revenue by Transport		0	0	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937
2. Net Sales by Plant		0	0	0	0	0	0	0	0
3. Revenue by Training Vessels and Demonstration Facilities		0	0	0	0	0	0	0	0
b. Expense		0	126,605	1,669,592	1,669,592	1,669,592	1,669,592	1,669,592	1,669,592
1. Administrative Expense		0	0	75,474	75,474	75,474	75,474	75,474	75,474
2. Expense by Transport		0	0	719,561	719,561	719,561	719,561	719,561	719,561
3. Cost of Goods Sold		0	0	0	0	0	0	0	0
4. Expense by Training Vessels and Demonstration Facilities		0	0	0	0	0	0	0	0
5. Depreciation		0	0	621,347	621,347	621,347	621,347	621,347	621,347
6. Interest		0	126,605	253,210	253,210	253,210	253,210	253,210	253,210
c. Income before D & I		0	0	2,633,902	2,633,902	2,633,902	2,633,902	2,633,902	2,633,902
d. Net Income		0	-126,605	1,759,345	1,759,345	1,759,345	1,759,345	1,759,345	1,759,345
II. Cash Flow									
a. Sources of Funds	0	4,350,499	4,350,499	2,380,692	2,380,692	2,380,692	2,380,692	2,380,692	2,380,692
1. Foreign Loan	0	4,220,165	4,220,165	0	0	0	0	0	0
2. Government Fund	0	130,334	130,334	0	0	0	0	0	0
3. Depreciation		0	0	621,347	621,347	621,347	621,347	621,347	621,347
4. Net Income		0	0	1,759,345	1,759,345	1,759,345	1,759,345	1,759,345	1,759,345
b. Uses of Funds	0	4,350,499	4,350,499	260,668	0	0	0	0	0
1. Construction	0	4,350,499	4,350,499	0	0	0	0	0	0
2. Reinvestment		0	0	0	0	0	0	0	0
3. Foreign Loan Repayment		0	0	260,668	0	0	0	0	0
4. Government Fund Repayment		0	0	0	0	0	0	0	0
c. Balance of Foreign Loan at End	0	4,220,165	8,440,330	8,440,330	8,440,330	8,440,330	8,440,330	8,440,330	8,440,330
d. Balance of Gov. Fund at End	0	130,334	260,668	0	0	0	0	0	0
e. Net Cash Flow	0	0	0	2,120,024	4,500,715	6,881,407	9,262,099	11,642,791	14,023,463

TABLE 9.8 INCOME STATEMENT AND CASH FLOW OF ZONE 6 (1990-2024) (2/4)

(UNIT : US\$)

	1999	2000	2001	2002	2003	2004	2005	2006	2007
I. Income Statement									
a. Revenue	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937
1. Revenue by Transport	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937
2. Net Sales by Plant	0	0	0	0	0	0	0	0	0
3. Revenue by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
b. Expense	1,669,592	1,669,592	1,669,592	1,656,932	1,644,271	1,631,611	1,618,950	1,606,290	1,593,629
1. Administrative Expense	75,474	75,474	75,474	75,474	75,474	75,474	75,474	75,474	75,474
2. Expense by Transport	719,561	719,561	719,561	719,561	719,561	719,561	719,561	719,561	719,561
3. Cost of Goods Sold	0	0	0	0	0	0	0	0	0
4. Expense by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
5. Depreciation	621,347	621,347	621,347	621,347	621,347	621,347	621,347	621,347	621,347
6. Interest	253,210	253,210	253,210	240,549	227,889	215,228	202,568	189,907	177,247
c. Income before D & I	2,633,902	2,633,902	2,633,902	2,633,902	2,633,902	2,633,902	2,633,902	2,633,902	2,633,902
d. Net Income	1,759,345	1,759,345	1,759,345	1,772,005	1,784,656	1,797,325	1,809,997	1,822,647	1,835,308
II. Cash Flow									
a. Sources of Funds	2,380,692	2,380,692	2,380,692	2,393,352	2,406,013	2,418,673	2,431,334	2,443,994	2,456,655
1. Foreign Loan	0	0	0	0	0	0	0	0	0
2. Government Fund	0	0	0	0	0	0	0	0	0
3. Depreciation	621,347	621,347	621,347	621,347	621,347	621,347	621,347	621,347	621,347
4. Net Income	1,759,345	1,759,345	1,759,345	1,772,005	1,784,656	1,797,325	1,809,997	1,822,647	1,835,308
b. Uses of Funds	685,559	0	422,017	422,017	529,013	422,017	1,107,575	422,017	422,017
1. Construction	0	0	0	0	0	0	0	0	0
2. Reinvestment	685,559	0	0	0	106,996	0	685,559	0	0
3. Foreign Loan Repayment	0	0	422,017	422,017	422,017	422,017	422,017	422,017	422,017
4. Government Fund Repayment	0	0	0	0	0	0	0	0	0
c. Balance of Foreign Loan at End	8,440,330	8,440,330	8,018,314	7,596,297	7,174,281	6,752,264	6,330,248	5,908,231	5,486,215
d. Balance of Gov. Fund at End	0	0	0	0	0	0	0	0	0
e. Net Cash Flow	15,718,616	18,099,308	20,057,984	22,629,320	21,906,320	25,992,977	27,226,735	29,248,713	31,281,352

TABLE 9.8 INCOME STATEMENT AND CASH FLOW OF ZONE 6 (1990-2024) (3/4)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
(UNIT : US\$)									
I. Income Statement									
a. Revenue	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937
1. Revenue by Transport	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937
2. Net Sales by Plant	0	0	0	0	0	0	0	0	0
3. Revenue by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
b. Expense	1,580,969	1,568,308	1,555,648	1,542,987	1,530,327	1,517,666	1,505,006	1,492,345	1,479,685
1. Administrative Expense	75,474	75,474	75,474	75,474	75,474	75,474	75,474	75,474	75,474
2. Expense by Transport	719,561	719,561	719,561	719,561	719,561	719,561	719,561	719,561	719,561
3. Cost of Goods Sold	0	0	0	0	0	0	0	0	0
4. Expense by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
5. Depreciation	621,347	621,347	621,347	621,347	621,347	621,347	621,347	621,347	621,347
6. Interest	164,586	151,926	139,265	126,605	113,944	101,284	88,623	75,963	63,302
c. Income before D & I	2,633,902	2,633,902	2,633,902	2,633,902	2,633,902	2,633,902	2,633,902	2,633,902	2,633,902
d. Net Income	1,847,968	1,860,629	1,873,289	1,885,950	1,898,610	1,911,271	1,923,931	1,936,592	1,949,252
II. Cash Flow									
a. Sources of Funds	2,469,315	2,481,976	2,494,636	2,507,297	2,519,957	2,532,618	2,545,278	2,557,939	2,570,599
1. Foreign Loan	0	0	0	0	0	0	0	0	0
2. Government Fund	0	0	0	0	0	0	0	0	0
3. Depreciation	621,347	621,347	621,347	621,347	621,347	621,347	621,347	621,347	621,347
4. Net Income	1,847,968	1,860,629	1,873,289	1,885,950	1,898,610	1,911,271	1,923,931	1,936,592	1,949,252
b. Uses of Funds	7,588,697	422,017	422,017	1,107,575	422,017	529,013	422,017	422,017	422,017
1. Construction	0	0	0	0	0	0	0	0	0
2. Reinvestment	7,166,681	0	0	685,559	0	106,996	0	0	0
3. Foreign Loan Repayment	422,017	422,017	422,017	422,017	422,017	422,017	422,017	422,017	422,017
4. Government Fund Repayment	0	0	0	0	0	0	0	0	0
c. Balance of Foreign Loan at End	5,064,198	4,642,182	4,220,165	3,798,149	3,376,132	2,954,116	2,532,099	2,110,083	1,688,066
d. Balance of Gov. Fund at End	0	0	0	0	0	0	0	0	0
e. Net Cash Flow	26,163,970	28,223,929	30,296,549	31,696,271	33,794,212	35,797,817	37,921,079	40,057,001	42,205,584

TABLE 9.8 INCOME STATEMENT AND CASH FLOW OF ZONE 6 (1990-2024) (4/4)

	2017	2018	2019	2020	2021	2022	2023	2024
(UNIT : US\$)								
I. Income Statement								
a. Revenue	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937
1. Revenue by Transport	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937	3,428,937
2. Net Sales by Plant	0	0	0	0	0	0	0	0
3. Revenue by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0
b. Expense	1,467,024	1,454,364	1,441,703	1,429,043	1,416,382	1,416,382	1,416,382	1,416,382
1. Administrative Expense	75,474	75,474	75,474	75,474	75,474	75,474	75,474	75,474
2. Expense by Transport	719,561	719,561	719,561	719,561	719,561	719,561	719,561	719,561
3. Cost of Goods Sold	0	0	0	0	0	0	0	0
4. Expense by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0
5. Depreciation	621,347	621,347	621,347	621,347	621,347	621,347	621,347	621,347
6. Interest	50,642	37,981	25,321	12,660	0	0	0	0
c. Income before D & I	2,633,902	2,633,902	2,633,902	2,633,902	2,633,902	2,633,902	2,633,902	2,633,902
d. Net Income	1,961,913	1,974,573	1,987,234	1,999,894	2,012,555	2,012,555	2,012,555	2,012,555
II. Cash Flow								
a. Sources of Funds	2,583,260	2,595,920	2,608,581	2,621,241	2,633,902	2,633,902	2,633,902	2,633,902
1. Foreign Loan	0	0	0	0	0	0	0	0
2. Government Fund	0	0	0	0	0	0	0	0
3. Depreciation	621,347	621,347	621,347	621,347	621,347	621,347	621,347	621,347
4. Net Income	1,961,913	1,974,573	1,987,234	1,999,894	2,012,555	2,012,555	2,012,555	2,012,555
b. Uses of Funds	1,107,575	887,241	422,017	422,017	0	0	7,959,236	0
1. Construction	0	0	0	0	0	0	7,959,236	0
2. Reinvestment	685,559	465,225	0	0	0	0	0	0
3. Foreign Loan Repayment	422,017	422,017	422,017	422,017	0	0	0	0
4. Government Fund Repayment	0	0	0	0	0	0	0	0
c. Balance of Foreign Loan at End	1,266,050	844,033	422,017	0	0	0	0	0
d. Balance of Gov. Fund at End	0	0	0	0	0	0	0	0
e. Net Cash Flow	43,681,268	45,389,947	47,576,512	49,775,737	52,409,639	55,041,540	49,718,206	52,352,108

TABLE 9.9 INCOME STATEMENT AND CASH FLOW OF PROTOTYPE SITE PASCAO (1990-2024) (1/4)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
(UNIT : US\$)									
I. Income Statement									
a. Revenue		198,343	198,343	198,343	198,343	198,343	198,343	198,343	198,343
1. Revenue by Transport		198,343	198,343	198,343	198,343	198,343	198,343	198,343	198,343
2. Net Sales by Plant		0	0	0	0	0	0	0	0
3. Revenue by Training Vessels and Demonstration Facilities		0	0	0	0	0	0	0	0
b. Expense		281,388	281,388	281,388	281,388	281,388	281,388	281,388	281,388
1. Administrative Expense		10,571	10,571	10,571	10,571	10,571	10,571	10,571	10,571
2. Expense by Transport		83,776	83,776	83,776	83,776	83,776	83,776	83,776	83,776
3. Cost of Goods Sold		0	0	0	0	0	0	0	0
4. Expense by Training Vessels and Demonstration Facilities		0	0	0	0	0	0	0	0
5. Depreciation		146,447	146,447	146,447	146,447	146,447	146,447	146,447	146,447
6. Interest		40,594	40,594	40,594	40,594	40,594	40,594	40,594	40,594
c. Income before D & I		103,996	103,996	103,996	103,996	103,996	103,996	103,996	103,996
d. Net Income		-83,045	-83,045	-83,045	-83,045	-83,045	-83,045	-83,045	-83,045
II. Cash Flow									
a. Sources of Funds	1,740,341	63,401	63,401	63,401	63,401	63,401	63,401	215,606	63,401
1. Foreign Loan	1,353,149	0	0	0	0	0	0	0	0
2. Government Fund	387,192	0	0	0	0	0	0	152,205	0
3. Depreciation		146,447	146,447	146,447	146,447	146,447	146,447	146,447	146,447
4. Net Income		-83,045	-83,045	-83,045	-83,045	-83,045	-83,045	-83,045	-83,045
b. Uses of Funds	1,740,341	63,401	63,401	63,401	63,401	63,401	63,401	215,606	63,401
1. Construction	1,740,341	0	0	0	0	0	0	0	0
2. Reinvestment		0	0	0	0	0	0	215,606	0
3. Foreign Loan Repayment		0	0	0	0	0	0	0	0
4. Government Fund Repayment		63,401	63,401	63,401	63,401	63,401	63,401	0	63,401
c. Balance of Foreign Loan at End	1,353,149	1,353,149	1,353,149	1,353,149	1,353,149	1,353,149	1,353,149	1,353,149	1,353,149
d. Balance of Gov. Fund at End	387,192	323,791	260,390	196,988	133,587	70,186	6,784	158,989	95,588
e. Net Cash Flow	0	0	0	0	0	0	0	0	0

TABLE 9.9 INCOME STATEMENT AND CASH FLOW OF PROTOTYPE SITE PASCAO (1990-2024) (2/4)

	1999	2000	2001	2002	2003	2004	2005	2006	2007
(UNIT : US\$)									
I. Income Statement									
a. Revenue	198,343	198,343	198,343	198,343	198,343	198,343	198,343	198,343	198,343
1. Revenue by Transport	198,343	198,343	198,343	198,343	198,343	198,343	198,343	198,343	198,343
2. Net Sales by Plant	0	0	0	0	0	0	0	0	0
3. Revenue by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
b. Expense	281,388	281,388	279,359	277,329	275,299	273,269	271,240	269,210	267,180
1. Administrative Expense	10,571	10,571	10,571	10,571	10,571	10,571	10,571	10,571	10,571
2. Expense by Transport	83,776	83,776	83,776	83,776	83,776	83,776	83,776	83,776	83,776
3. Cost of Goods Sold	0	0	0	0	0	0	0	0	0
4. Expense by Training Vessels and Demonstration Facilities	0	0	0	0	0	0	0	0	0
5. Depreciation	146,447	146,447	146,447	146,447	146,447	146,447	146,447	146,447	146,447
6. Interest	40,594	40,594	38,565	36,535	34,505	32,476	30,446	28,416	26,386
c. Income before D & I	103,996	103,996	103,996	103,996	103,996	103,996	103,996	103,996	103,996
d. Net Income	-83,045	-83,045	-81,016	-78,986	-76,956	-74,927	-72,897	-70,867	-68,837
II. Cash Flow									
a. Sources of Funds	63,401	67,657	1,107,947	67,657	283,263	71,520	73,550	164,911	77,609
1. Foreign Loan									
2. Government Fund	0	4,256	1,042,516	197	213,773	0	0	89,332	0
3. Depreciation	146,447	146,447	146,447	146,447	146,447	146,447	146,447	146,447	146,447
4. Net Income	-83,045	-83,045	-81,016	-78,986	-76,956	-74,927	-72,897	-70,867	-68,837
b. Uses of Funds	63,401	67,657	1,107,947	67,657	283,263	71,520	73,550	164,911	77,609
1. Construction									
2. Reinvestment	0	0	1,040,289	0	215,606	0	0	97,254	0
3. Foreign Loan Repayment	0	67,657	67,657	67,657	67,657	67,657	67,657	67,657	67,657
4. Government Fund Repayment	63,401	0	0	0	0	3,863	5,893	0	9,952
c. Balance of Foreign Loan at End	1,353,149	1,285,491	1,217,834	1,150,177	1,082,519	1,014,862	947,204	879,547	811,889
d. Balance of Gov. Fund at End	32,186	36,442	1,078,958	1,079,155	1,292,927	1,289,065	1,283,172	1,372,504	1,362,552
e. Net Cash Flow	0	0	0	0	0	0	0	0	0

TABLE 9.9 INCOME STATEMENT AND CASH FLOW OF PROTOTYPE SITE PASCAO (1990-2024) (3/4)

	(UNIT : US\$)									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	
I. Income Statement										
a. Revenue	198,343	198,343	198,343	198,343	198,343	198,343	198,343	198,343	198,343	198,343
1. Revenue by Transport	198,343	198,343	198,343	198,343	198,343	198,343	198,343	198,343	198,343	198,343
2. Net Sales by Plant	0	0	0	0	0	0	0	0	0	0
3. Revenue by Training Vessels and Dismantling Facilities	0	0	0	0	0	0	0	0	0	0
b. Expense	265,151	263,121	261,091	259,061	257,032	255,002	252,972	250,942	248,913	
1. Administrative Expense	10,571	10,571	10,571	10,571	10,571	10,571	10,571	10,571	10,571	
2. Expense by Transport	83,776	83,776	83,776	83,776	83,776	83,776	83,776	83,776	83,776	
3. Cost of Goods Sold	0	0	0	0	0	0	0	0	0	
4. Expense by Training Vessels and Dismantling Facilities	0	0	0	0	0	0	0	0	0	
5. Depreciation	146,447	146,447	146,447	146,447	146,447	146,447	146,447	146,447	146,447	
6. Interest	24,357	22,327	20,297	18,268	16,238	14,209	12,178	10,149	8,119	
c. Income before D & I	103,996	103,996	103,996	103,996	103,996	103,996	103,996	103,996	103,996	
d. Net Income	-66,808	-64,778	-62,748	-60,719	-58,689	-56,659	-54,629	-52,600	-50,570	
II. Cash Flow										
a. Sources of Funds	79,639	283,263	83,699	1,107,947	87,758	89,788	91,817	283,263	95,877	
1. Foreign Loan	0	201,594	0	1,022,218	0	0	0	189,416	0	
2. Government Fund	0	0	0	0	0	0	0	0	0	
3. Depreciation	146,447	146,447	146,447	146,447	146,447	146,447	146,447	146,447	146,447	
4. Net Income	-66,808	-64,778	-62,748	-60,719	-58,689	-56,659	-54,629	-52,600	-50,570	
b. Uses of Funds	79,639	283,263	83,699	1,107,947	87,758	89,788	91,817	283,263	95,877	
1. Construction	0	0	0	0	0	0	0	0	0	
2. Reinvestment	0	215,606	0	1,040,289	0	0	0	215,606	0	
3. Foreign Loan Repayment	67,657	67,657	67,657	67,657	67,657	67,657	67,657	67,657	67,657	
4. Government Fund Repayment	11,982	0	16,041	0	20,101	22,130	24,160	0	28,219	
c. Balance of Foreign Loan at End	744,232	676,574	608,917	541,260	473,602	405,945	338,287	270,630	202,972	
d. Balance of Gov. Fund at End	1,350,570	1,552,165	1,536,123	2,558,342	2,538,241	2,516,111	2,491,951	2,468,167	2,443,148	
e. Net Cash Flow	0	0	0	0	0	0	0	0	0	

TABLE 9.9 INCOME STATEMENT AND CASH FLOW OF PROTOTYPE SITE PASCAO (1990-2024) (4/4)

Income Statement and Cash Flow (Pasacao)		(UNIT : US\$)							
	2017	2018	2019	2020	2021	2022	2023	2024	
I. Income Statement									
a. Revenue	198,343	198,343	198,343	198,343	198,343	198,343	198,343	198,343	
1. Revenue by Transport	198,343	198,343	198,343	198,343	198,343	198,343	198,343	198,343	
2. Net Sales by Plant	0	0	0	0	0	0	0	0	
3. Revenue by Training Vessels and Dismantling Facilities	0	0	0	0	0	0	0	0	
b. Expense	248,883	244,853	242,824	240,794	240,794	240,794	240,794	240,794	
1. Administrative Expense	10,571	10,571	10,571	10,571	10,571	10,571	10,571	10,571	
2. Expense by Transport	83,776	83,776	83,776	83,776	83,776	83,776	83,776	83,776	
3. Cost of Goods Sold	0	0	0	0	0	0	0	0	
4. Expense by Training Vessels and Dismantling Facilities	0	0	0	0	0	0	0	0	
5. Depreciation	146,447	146,447	146,447	146,447	146,447	146,447	146,447	146,447	
6. Interest	6,089	4,059	2,030	0	0	0	0	0	
c. Income before D & I	103,996	103,996	103,996	103,996	103,996	103,996	103,996	103,996	
d. Net Income	-48,540	-46,510	-44,481	-42,451	-42,451	-42,451	-42,451	-42,451	
II. Cash Flow									
a. Sources of Funds	97,907	99,936	101,966	103,996	1,353,149	103,996	103,996	103,996	
1. Foreign Loan	0	0	0	0	1,249,153	0	0	0	
2. Government Fund	0	0	0	0	0	0	0	0	
3. Depreciation	146,447	146,447	146,447	146,447	146,447	146,447	146,447	146,447	
4. Net Income	-48,540	-46,510	-44,481	-42,451	-42,451	-42,451	-42,451	-42,451	
b. Uses of Funds	97,907	99,936	101,966	103,996	1,353,149	103,996	103,996	103,996	
1. Construction	0	0	0	0	1,353,149	0	0	0	
2. Reinvestment	0	0	0	0	0	0	0	0	
3. Foreign Loan Repayment	67,657	67,657	67,657	67,657	0	0	0	0	
4. Government Fund Repayment	30,249	32,279	34,309	103,996	0	103,996	103,996	103,996	
c. Balance of Foreign Loan at End	135,315	67,657	0	0	0	0	0	0	
d. Balance of Gov. Fund at End	2,622,898	2,590,620	2,556,311	2,452,315	3,701,468	3,597,472	3,493,477	3,389,481	
e. Net Cash Flow	0	0	0	0	0	0	0	0	

TABLE 9.10 FINANCIAL INTERNAL RATE OF RETURN

Item	FIRR (%)
Total Commercial Project	6.9
Zone 1	2.2
Zone 2	-
Zone 3	4.2
Zone 6	25.8
Prototype Site Pasacao	-

FIRR is calculated by the following formula

$$\sum_{t=1}^{25} (C_t - E_t) / (1+r)^{t-1} = 0$$

C_t = Initial investment and
reinvestment at year t

E_t = Revenue before
depreciation and interest

TABLE 9.11 SENSITIVITY TEST OF FIRR

Commercial Project

Cost	Income				
	-20%	-10%	0%	10%	20%
20%			2.8%	5.1%	6.9%
10%		2.3%	4.9%	6.9%	8.6%
0%	1.6%	4.7%	6.9%	8.8%	10.4%
-10%	4.4%	6.9%	8.9%	10.7%	12.4%
-20%	6.9%	9.2%	11.2%	13.0%	14.7%

Zone 3

Cost	Income				
	-20%	-10%	0%	10%	20%
20%	-1.8%	0.0%	1.5%	2.9%	4.2%
10%	-0.5%	1.2%	2.8%	4.2%	5.5%
0%	0.9%	2.6%	4.2%	5.6%	6.9%
-10%	2.4%	4.2%	5.7%	7.2%	8.5%
-20%	4.2%	5.9%	7.5%	9.0%	10.4%

(Zone 1)

Cost	Income				
	-20%	-10%	0%	10%	20%
20%	-5.1%	-2.9%	-0.9%	0.7%	2.2%
10%	-3.4%	-1.3%	0.6%	2.2%	3.7%
0%	-1.7%	0.4%	2.2%	3.8%	5.3%
-10%	0.2%	2.2%	4.0%	5.6%	7.0%
-20%	2.2%	4.2%	6.0%	7.6%	9.1%

Zone 6

Cost	Income				
	-20%	-10%	0%	10%	20%
20%	16.6%	19.1%	21.4%	23.6%	25.8%
10%	18.4%	21.0%	23.4%	25.8%	28.1%
0%	20.5%	23.2%	25.8%	28.3%	30.8%
-10%	22.9%	25.8%	28.6%	31.3%	33.9%
-20%	25.8%	28.9%	31.9%	34.9%	37.7%

Zone 2

Cost	Income				
	-20%	-10%	0%	10%	20%
20%	-24.0%	-21.2%	-18.5%	-16.2%	-13.9%
10%	-21.9%	-19.0%	-16.4%	-13.9%	-11.8%
0%	-19.6%	-16.6%	-13.9%	-11.5%	-9.4%
-10%	-16.9%	-13.9%	-11.3%	-9.0%	-6.9%
-20%	-13.9%	-11.0%	-8.4%	-6.2%	-4.4%

Prototype : Pasacao

Cost	Income				
	-20%	-10%	0%	10%	20%
20%	-15.1%	-13.1%	-11.2%	-9.5%	-7.9%
10%	-13.6%	-11.6%	-9.7%	-7.9%	-6.3%
0%	-12.0%	-9.9%	-7.9%	-6.2%	-4.6%
-10%	-10.1%	-7.9%	-6.0%	-4.2%	-2.6%
-20%	-7.9%	-5.8%	-3.8%	-2.0%	-0.4%

10. MASTER ACTION PLAN

10. MASTER ACTION PLAN

10.1 Institutional Framework

(1) Legal Provisions

The PFDA was created in Aug. 1976 as the Philippine Fish Marketing Authority, by virtue of Presidential Decree (P.D.) 977. It was renamed under Executive Order (E.O.) 772 issued on Feb. 8, 1982 for amending P.D. 977. Both being functioning as laws, stipulated are organization, functions and powers of the PFDA. P.D. 977 and E.O. 772 are otherwise known as the PFDA Charter.

The government policy to which the PFDA was established, is provided for in Sec. 1 of P.D. 977, to wit:

"..... to promote the development of the fishing industry and improve efficiency in the handling, preserving, marketing, and distribution of fish and fishery/aquatic products through the establishment and operation of fish markets and the efficient operation of fishing ports' harbors and other marketing facilities."

On June 30, 1984, E.O. 967 was promulgated. Pursuant to this E.O., the Bureau of Fisheries and Aquatic Resources (BFAR) and the PFDA were transferred from the Ministry of Natural Resources to the Ministry of Agriculture and Food. The Fishery Industries Development Council (FIDC) was then abolished.

Upon new administration taking office, E.O.116 was issued to reorganize the Ministry (Jan. 30, 1987). After the ratification of the 1987 Constitution, the Ministry became the Department of Agriculture (DA). The PFDA remains as an attached agency, while the BFAR was integrated into the staff bureaus of the DA. No provision is stipulated in E.O.116 to revise functions and powers of the PFDA. Transitory provisions of the 1987 Constitution states:

"All existing laws, decrees, executive orders, proclamations, letter of instructions and other executive issuances not inconsistent with this Constitution shall remain operative until amended, repealed, or revoked."

(Sec. 3 of Article XVIII)

Therefore the PFDA Charter (P.D.977 as amended by E.O. 772) is still effective.

(2) Functions and Powers of the PFDA

The followings are the fundamental functions and powers of the PFDA:

- 1) Manage, operate and develop the Navotas Fishing Port Complex (NFPC) and such other fishing port complexes that may be established by the Authority;
- 2) Identify and determine the sites for the establishment of fishing port complexes, and prepare, adopt and implement comprehensive plans for their overall development, including the specifications of infrastructure facilities, such as piers, wharves, quays, landings, anchorages and breakwaters in coordination with the Ministry of Public Works and Highways (now, DPWH), and civil works, such as factory buildings, warehouses, cold storage and ice plants, and other structures related to the fishing industry as may be necessary and useful in the conduct of its business;
- 3) Supervise to the extent necessary, the enterprises which the Authority may authorize to be established within the fishing port complexes under its jurisdiction;
- 4) Acquire, maintain, operate, purchase, lease or dispose of the equipment such as vessels, fishing gear, refrigerated trucks/vans and rolling stock, ice and cold storage plants, barges, communication facilities, and related facilities;
- 5) Assess and collect reasonable fees, tolls, charges, rentals, and the like, for the use, lease or sale of property, equipment, facilities

and services in order to raise revenues for the Authority and to adjust the same when so warranted;

- 6) Formulate and implement rules and regulations on the conduct of business activities inside the fishing port complexes;
- 7) Contract indebtedness and issue bonds, upon recommendation of the Minister (now, Secretary) of Finance and approval by the President of the Philippines, whenever essential to the proper administration of its corporate affairs;
- 8) Acquire, hold and dispose of real and personal property in the exercise of its functions and powers;"

The PFDA is primarily obligated with planning, development and management of fishing port complexes. Landing facilities, fish market and other marketing facilities, ice plant and cold storages, warehouses and processing plants may be established inside the fishing port complexes. The Municipal Fishing Port Development Program of the PFDA aims at this objective: however, due to fund limitation, actual accomplishment has fallen in the different outcome only with the provision of landing facilities and a market hall.

Outside the fishing port complexes, the PFDA is authorized to procure equipments needed in the conduct of its business, and may determine their suitable management system. These include vessels, refrigerated trucks/vans, ice plants and cold storage plants and communication system. If processing plants be included, all the system components in the FTS are covered by PFDA's jurisdictions.

(3) Organization of the PFDA

The corporate powers of the Authority are vested in and exercised by a Board of Directors, composed of the following:

- Secretary of Agriculture (chairman)
- Administrator, National Food Authority (vice chairman)
- Secretary of Public Works and Highways
- Secretary of Trade and Industry
- Secretary of Environment and Natural Resources
- Two representatives from the private sector

The Board of Directors formulates PFDA by-laws, promulgates policies, prescribes rules and regulations, approves the annual budget, contract and agreement, determines charges, tolls, fees and rentals, and submits reports to the President of the Philippines, among others.

The management of the Authority is vested in the General Manager who is appointed by the Board of Directors. He implements and enforces the policies, programs, guidelines, decisions, rules and regulations prescribed, being responsible for day-to-day affairs of the PFDA. The staffing pattern, number, duties and responsibilities of personnel, salaries and emoluments are determined, subject to an approval of the Board of Directors. He is assisted by the Assistant General Manager who acts as a deputy in his absence.

The organizational structure of the PFDA consists of the Central Office and field organizations, which is shown in Fig. 15.

PFDA Central Office is spearheaded by the Offices of the General Manager and the Assistant General Manager. Under the Office of the Assistant General Manager, there are three (3) staff elements, namely: the Public Information Staff, the Legal Staff and the Corporate Management Staff. There are five (5) functional departments, to wit: Administrative, Finance, Planning and Development Services, Technical Services and the Operation Management. The Northern Palawan Fisheries Development Project, an ADB-assisted project implemented by the PFDA, also maintains a staff in the Central Office.

Field organizations have been established at large-scale fishing port complexes: Navotas Fishing Port Complex (NFPC), Iloilo Fishing Port Complex (IFPC), Zamboanga Fishing Port Complex (ZFPC) and Lucena Fishing Port Complex (soon to be set up). Aside from these, the Area Operations Centers (General Santos and Lucena) under the Planning and Development Dept., Fishing Port Div. and IPCS Div. both under the Operation Management Dept., have their staff deployed in the field. The Northern Palawan Fisheries Development Project has also its own field staff. These field organizations are attributed to the projects implemented by or turned over to the PFDA.

10.2 Implementing Requirements

(1) Planning, Programming and Budgeting System

1) NFPC, IFPC, ZFPC and MFPs

The Dept. of Public Works and Highway (DPWH) formulates plans and programs, Fishing Port Package I and municipal fishing ports (MFPs), being responsible for their implementation. Funds are allocated for the "DPWH Infrastructure Program". Local portion of the funds are allocated in close coordination with the Dept. of Budget and Management (DBM). For its part, the Dept. of Finance (DOF) negotiates with foreign sources on loan agreements, in coordination with the NEDA. It is required that the fund allocation should correspond to the Philippine Development Program.

The specialized Project Management Office has been set up by the DPWH for the implementation of the Fishing Port Package I to construct large-scale commercial fishing ports like IFPC and ZFPC. On the other hand, the field offices of the DPWH undertake construction works of a number of MFPs.

After completion, the fishing port complexes are handed over to the PFDA for operation and supervision. With respect to MFPs, the DPWH first hands over to the municipality where it is located. The PFDA then negotiates with the municipality concerned to conclude a Memorandum of

Agreement for joint-management. Out of a hundred MFPs, however, this kind of joint-management set up is exercised only in Mercedes, Estancia and Atimonan, Quezon (refer to Fig.16).

2) PFDA New Projects (Nationwide IPCS, FTS and General Santos Fishing Port Complex)

The plans and programs for new project shall be submitted to the DA which will make arrangements with the DBM, DOF and the NEDA for fund allocation. The Agriculture and Fishery Councils constituted from the national level down to the municipalities, play a consultative role in reviewing the submitted plans and programs (refer to Fig. 16).

Whilst the planning and programming are done by the PFDA, the construction of large-scale fishing ports like General Santos would still have to be delegated to the DPWH, in view of its experiences and expertise. Fund transfer from the PFDA shall be arranged in such a case.

In new projects, the PFDA should closely coordinate with (a) the Local Water Utilities Administration and the local water districts, for water supply, (b) the National Power Corporation/the National Electrification Administration and the local electric cooperatives, for power supply, and (c) the DPWH, for access roads.

(2) Procedures Required for FTS Components

1) Administration of FTS Operation

This should be performed by the PFDA: only internal arrangement is required.

2) Quality Control, Communication and Extension

These should also be placed under PFDA responsibility, because of the nature of the services. Internal arrangement is also required.

3) Processing Plants and IPCS

When these are to be located within the fishing port complex, the PFDA may exclusively plan, construct and determine their management system, according to its Charter. If outside, however, the jurisdiction over the land area should first be authorized to the PFDA. Deliberation will be required with the local government units or the agencies possessing the area. Memorandum of Agreement should be drawn up, which certifies the authorization.

The long-defunct NFPC-IPCS has been leased to a private operator since June 1987. Operation and maintenance costs are born by an operator and no rehabilitation expense shall be reimbursed from the PFDA. On the contrary, IFPC-IPCS is operated and maintained by the PFDA. Fee is charged for the use of contact freezer and cold storage rooms to 10 processing plants operating inside with the space leased. Land lots are leased out to the private companies, where they can establish and operate the prescribed facilities. In case of the IPCSs transferred from the BFAR, operation forms are: 4 under PFDA direct operation, 1 under O/M responsibility of the PFDA with the fees charged for the use of freezer and cold storage, and 13 leased out to the private sector.

4) Fish Carrier Vessels and Transport Vessels

Fish carrier vessels and transport vessels are classified as "fishing boats" in the Philippines, under the "Fisheries Decree of 1975" (P.D. 704). The PFDA shall register the vessels at the Philippine Coast Guard (PCG), and obtain clearances from both the BFAR and the Maritime Industry Authority (MARINA). BFAR's clearance is in the form of Commercial Fishing Boat Licenses. If the transport vessel be used for carrying general cargo, another clearance (cargo vessel clearance) has to be obtained from the MARINA. Furthermore, any kind of lease contract of fishing boats requires the lease permits issued by both the BFAR and the PCG.

5) Insulated Trucks and Refrigerated Trucks

After procurement, the PFDA shall register the vehicles at the Land Transport Office which provides with the registration numbers in

government (red) plates. For the use directly by the PFDA as well as for leasing out to private operators, there is no need to obtain a permit from the Land Transport Franchising Regulatory Board (LTFRB); however, permits for public use shall be obtained from the LTFRB, if the PFDA want to repair, maintain and rent the vehicles to the private operator.

(3) Principles in Management System

1) Applicable Operation Forms

To the system component in the FTS, several forms may be adopted in the operation. The importance lies in the integration of the FTS, as a whole. Control and timely intervention of the PFDA must be extended whenever necessary, to ensure effective movement of fishery/aquatic products meeting the assessed situations. Possible operation forms are enumerated below.

a. PFDA Direct Operation

O/M responsibility is under the PFDA which bears all the O/M expenses. The operator is PFDA organic personnel assigned, and the management is done administratively.

b. PFDA Entrusting Operation, on Payment Basis

O/M responsibility and cost bearing are in the hand of the PFDA. The operating staff or the operators are hired from the outside, with the fixed payment. Operational control is secured with direct PFDA involvement.

c. PFDA Responsible for O/M, with Fees Charged for Utilization

O/M costs are born by the PFDA which also responsible for O/M of the facilities and/or equipments. The use is dependent upon the private sector and utilization fees are charged.

d. PFDA Entrusting Operation, on Commission Basis

O/M responsibility and cost bearing are shared as specified in

the agreement between the PFDA and the private operator (mostly, company or association). The profits are also shared, according to the fixed ratio. The amount to be received by the entrusted operator alters in response to the amount of profits.

Operational control is partly secured. This can be termed as the joint-management system.

e. Leasing out to the Private Sector

O/M responsibility and cost bearing are all left to the lessee who is selected from the private sector. Operational control is hardly to be secured, unless the specific conditions are attached to the lease contract to be followed by the lessee.

2) Standard Form of Operation for FTS Components

The PFDA direct operation should be adopted to FTS administration, quality control, communication, extension, training vessels and mobile ice plant. Insulated trucks and fish transport vessels are to be entrusted to private operators, on payment basis, in view of the movement to be controlled. Some of the insulated trucks and refrigerated trucks should be attached to the processing plants, for the collection of raw materials as well as distribution of products. Entrusting operation to the private operators, on commission basis, is to be applied to fish, carrier vessels, mobile fish stores with cooling units and demonstration fish stores in the consumption centers. The lease system is for the processing plants and the IPCS; inside the NFPC, however, they should be entrusted to the private operator, on commission basis.

10.3 Proposed Management System

(1) FTS Division, Operation Management Dept. (National Center)

As an organizational unit of the Central Office, PFDA, the FTS Div. should be created under the Manager, Operations Management Dept. The FTS Div. exercises direction and control over all the FTS operations (refer to Fig. 17).

The composition of the FTS Division is to be:

Division Chief
Assistant to the Chief
Intelligence officer
Operations officer
Communication staff (3)
Administration staff (4)
Finance/Accounting staff (4)

Total number of personnel: 15

The Division chief is responsible for overall operations and administration of FTS organization nationwide. The Intelligence Officer conducts analysis of market/marketing information, movement of fish/fisheries products and transport/distribution needs derived. Practical control of vehicle/vessel movements is performed by the Operations Officer as well as operational control of the FTS components such as processing plants. Communication staff handle O/M of communication equipment, data processing and compilation and retrieval of the information to be transmitted.

The field organization for FTS are all placed under the operational control of the Division Chief who is assisted by the staff under him. There are the Fishing Port Div. and the IPCS Div. under the Manager, Operations Management Dept., parallel to the proposed FTS Div. The field offices to handle MFPs and IPCS might be established in the same area as in FTS. The Manager, Operations Management Dept. will be able to integrate operations in three functional areas; namely, MFP, IPCS and FTS; by directing/instructing the respective Division Chiefs under him. It is further desirable that, in the field, one Area Manager be responsible for performances of MFP, IPCS and FTS, for integrated operations.

At the initial stage of FTS project implementation, especially that for pilot projects, most of the personnel of the FTS Div. should be stationed at the NFPC. It is not only because the office space is limited inside the Central Office but because personnel should be seconded for training and for effective supervision.

(2) Pilot Project

The system components of pilot project inside the NFPC being highly demonstrative, it is advisable that the PFDA directly control those operations as far as possible. The following alternative management system will be recommended for the operation of the FTS pilot project in case of difficulties of sole management by PFDA. In this regard, the plants for manufacturing styroforms, shrimp processing and surimi processing should all be operated under the cooperation with private sectors, on commission basis, unlike other zones. In case of a mobile IPCS, it should be under PFDA direct operation: the IPCS Div., Operation Management Dept. will provide with its crew members. Five insulated/refrigerated trucks attached to the shrimp/surimi processing plants are to be operated under the cooperation with sectors on payment basis. Furthermore, five mobile fish stores are to be operated on commission basis to the private sectors. The demonstration cooking/sales shops in three consumption centers; Tarlac, Cabanatuan City and Cubao are to be entrusted to private operators, on commission basis. The PFDA occasionally inspects their operations, from the NFPC. Three insulated trucks are to be entrusted, on payment basis, for the controlled distribution of fish.

(3) Zone 1

1) NFPC (Zone center)

FTS field office should be newly established under the NFPC Port Manager. It will be named FTS Div., NFPC. The composition of NFPC-FTS Div. is: a Chief and his assistant, 2 finance/accounting staff, 2 administrative staff, 4 quality control staff, 4 extension staff and 3 communication staff. Total number of personnel is 17. The NFPC-FTS Div. belongs to NFPC organization; however, it should be operationally controlled by the Division Chief of FTS Div., Operations Management Dept.

Primary tasks of the NFPC-FTS Div. are the direction and control of FTS operations in Zone 1, based on the information transmitted from the satellites as well as instruction from the Central Office. The Chief is

responsible for overall exercises.

A laboratory manned by the quality control staff is the facility where the experiments, testing and training in fish quality control are carried out. Extension staff occasionally conduct demonstration to NFPC visitors, but they will mostly be dispatched to the field offices not only in zone 1 but in other zones related to FTS. The extension services for FTS establishment will be conducted by them. At the stage of pilot project implementation, some additional staff will have to be seconded from the Central Office as already mentioned previously.

2) Masinloc (Sub-center)

FTS field office should be newly stationed, manned by 5 personnel composed of a chief, 2 accounting/administrative staff, and 2 communication staff. Principal function of the office is direction and control of FTS operations in the sub-zone. Movement of carrier vessels and insulated trucks is regulated. The chief is responsible for all the analysis and control of operations.

Five insulated trucks are to be entrusted to private operators, on payment basis, in ensuring their deployment to accord to PFDA's determination. The IPCS should be leased to a private operator. Eight carrier vessels should be entrusted the operation to the fishermen's associations, on commission basis. Basic agreement on the operation of carrier vessels including method of operation in details should be made between PFDA and fishermen's associations or the representative of fishermen.

Operation/maintenance costs of carrier vessels are to be borne among PFDA, fishermen's associations and representative of fishermen based on shares agreed with the profit divided accordingly.

The fishermen associations being nominal and inactive mostly in the Philippines, the PFDA might promote to form suitable association to operate carrier vessels by persuading fishermen in the area. Like the Northern Palawan Fisheries Development Project, PFDA personnel will have to be dispatched to make contact with fishermen.

3) Sta. Cruz and Subic (satellite sites)

Communication personnel belonging to the PFDA should be manned with radio equipments: the number required in each site is two.

4) Orani (sub-center)

PFDA-FTS field office should be newly established, manned by 5 personnel: a chief, 2 accounting/administrative staff and 2 communication staff. The role of the office is to control processing plants and to guide fish-pond operators.

Shrimp processing plant is to be leased to the private sector. In concluding lease contracts, conditions should be attached that the operator follow PFDA instructions wherever necessary. Two insulated trucks and 2 refrigerated trucks are to be attached to the plant for its exclusive use. It is the incentive to the operator.

5) Guagua and Hagonoy (satellite sites)

In each satellite, 2 communication personnel should be manned, equipped with portable-radio. Hagonoy being selected as a collection point, two more personnel would be required, with the obligation of accounting and partly of extension.

(4) Zone 2

1) Mercedes (zone center)

New FTS field office should be created as a zone center, besides the existing MFP field office. It should be composed of 10 persons: a chief, 2 finance staff, 2 administrative staff, 2 quality control staff and 3 communication staff. They exercise the direction and control of FTS operations in the zone, based on information transmitted from the national center as well as from satellite sites.

The salted/dried fish processing plant should be leased to a private

operator under the conditions that the the profits of fishermen's associations be secured and the operations follow PFDA's instruction whenever necessary. Three insulated trucks are to be entrusted, on payment basis, to private operators to secure the prescribed route and frequency of operation. On the other hand, 2 carrier vessels shall be entrusted to the fishermen's associations, on commission basis.

2) Sta. Elena, Jose Panganiban and Paracale (satellite sites)

In each site, 2 communication staff should be manned, with radio equipments.

(5) Zone 3

1) Estancia (zone center)

Besides the existing MFP office, FTS field office should be established; manned by 12 personnel: a chief and an assistant, 1 fish loading officer, 2 finance staff, 2 administrative staff, 3 communication staff and 2 quality control staff. The chief is responsible for regulation and control of the transportation movement and the operation in the FTS all over the zone. Fish loading officer is responsible for collection and loading of fish/fishery products.

The salted/dried fish processing plant should be leased to a private operator, under the conditions for protecting small-scale fishermen and the PFDA instruction be followed wherever required. Three insulated trucks, on payment basis, to the other operators and three carrier vessels should be entrusted to the fishermen's associations, on commission basis. Two fish transport vessels bound for Manila should be entrusted to private operators, on payment basis.

2) Roxas City (sub-center)

FTS field office with 5 persons is to be newly created; a chief, 2 accountants and 2 communication staff. The shrimp processing plant is to be provided with an insulated truck and a refrigerated truck, for the collection of raw materials and distribution of the products. The plant

should be leased to private operator. Other 3 insulated trucks will have to be entrusted to other private operators, on payment basis.

3) Pontevedra, Carles, San Dionisio and Concepcion (satellites)

Each satellite site should be manned by 2 communication staff whose obligations include partly extension functions.

(6) Zone 6

Inside the General Santos Fishing Port Complex, the FTS Unit should be established. Composed of a chief, a fish loading officer, 2 administrative cum finance staff, 2 communication staff and 2 quality control staff; the FTS Unit exercises direction and control over FTS operations inside the zone. It belongs to the organization under the Port Manager; however, being under the operational control of the FTS Div., Operations Management Dept. (Central office).

The main concern in the activities of the FTS Unit is the furtherance of tuna fishing improvement, in preparation for the establishment of the new Fishing Port Complex.

All the operation of FTS components inside the Fishing Port Complex should be entrusted to private operators. Two transport vessels bound for Manila are to be entrusted, on payment basis, and also 7 insulated trucks on payment basis.

(7) Prototype site Pasacao

Five PFDA personnel should be manned, composed of a chief and his assistant, an accountant and 2 communication staff. They carry out regulation of the movement of 2 carrier vessels and 3 insulated trucks. The operation of carrier vessels is to be entrusted to the fishermen's associations, on commission basis, and that of the insulated trucks, on payment basis, to other private operators.

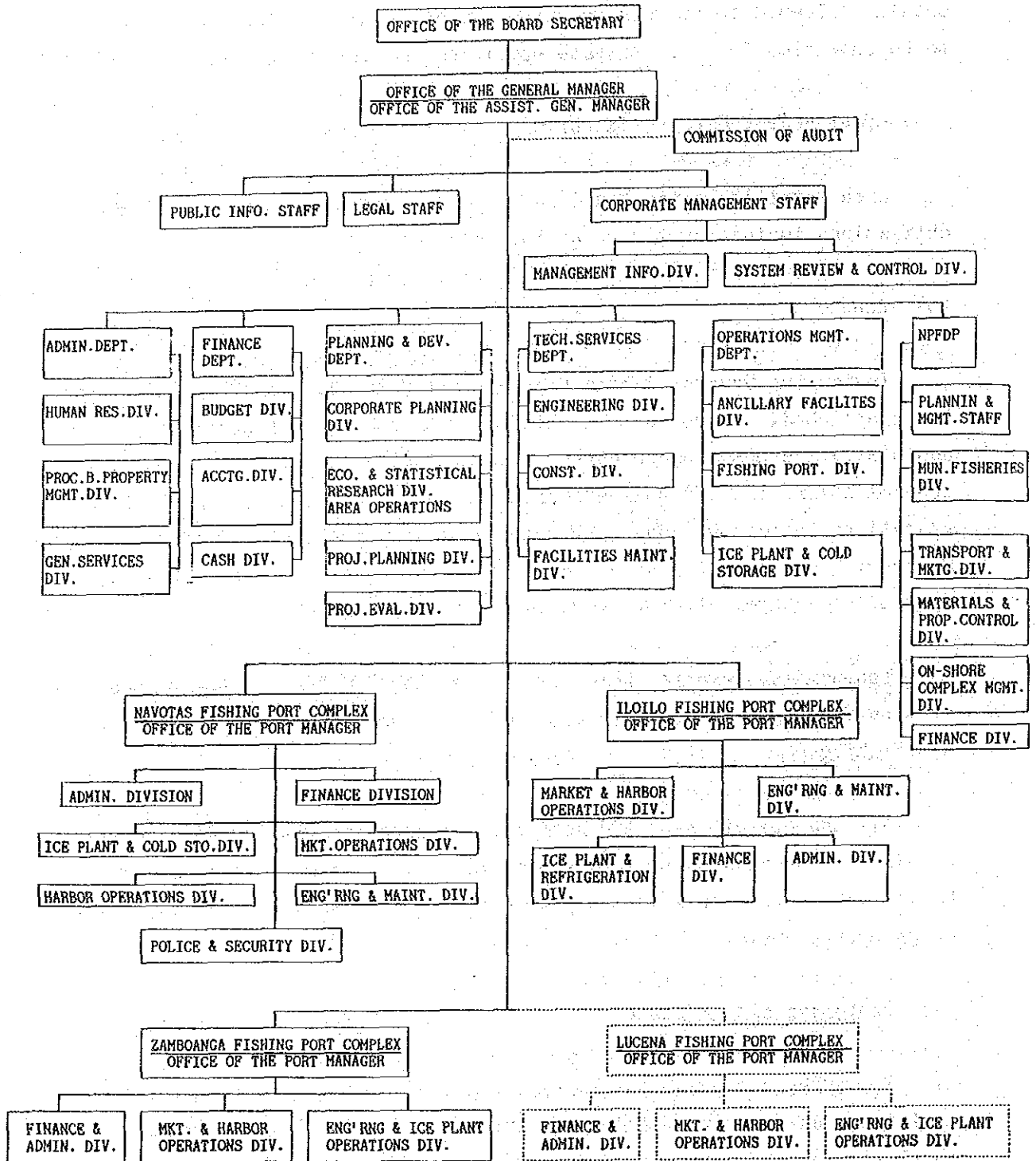
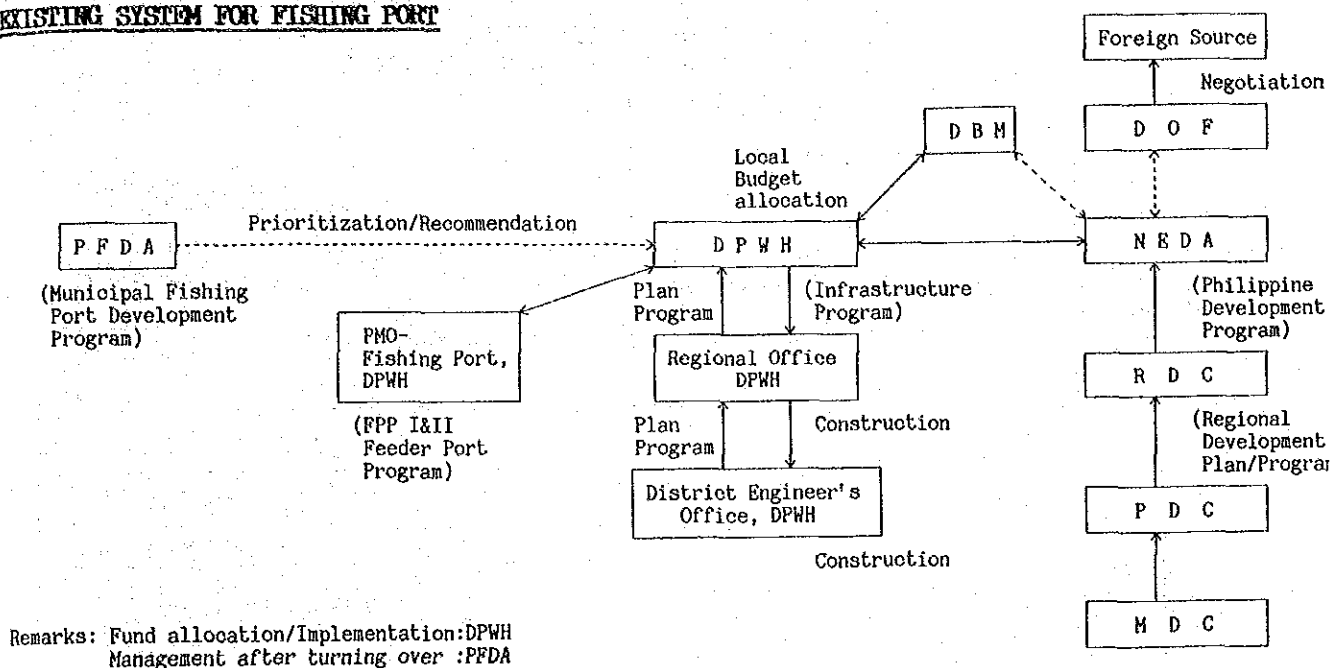


FIG. 15 ORGANIZATION OF PFDA

EXISTING SYSTEM FOR FISHING PORT



PROPOSED SYSTEM FOR FTS

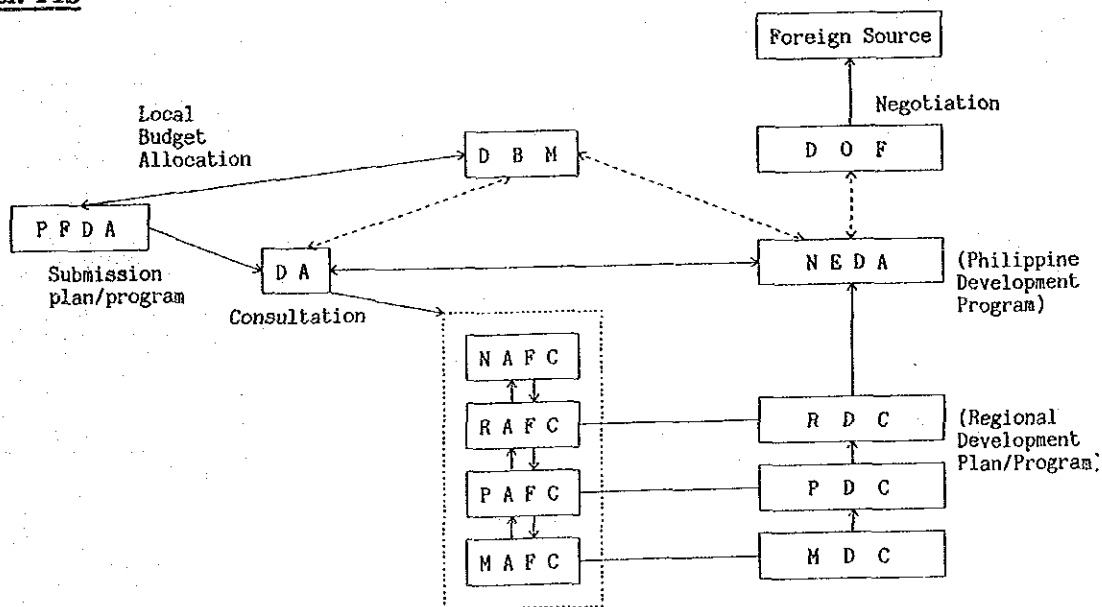
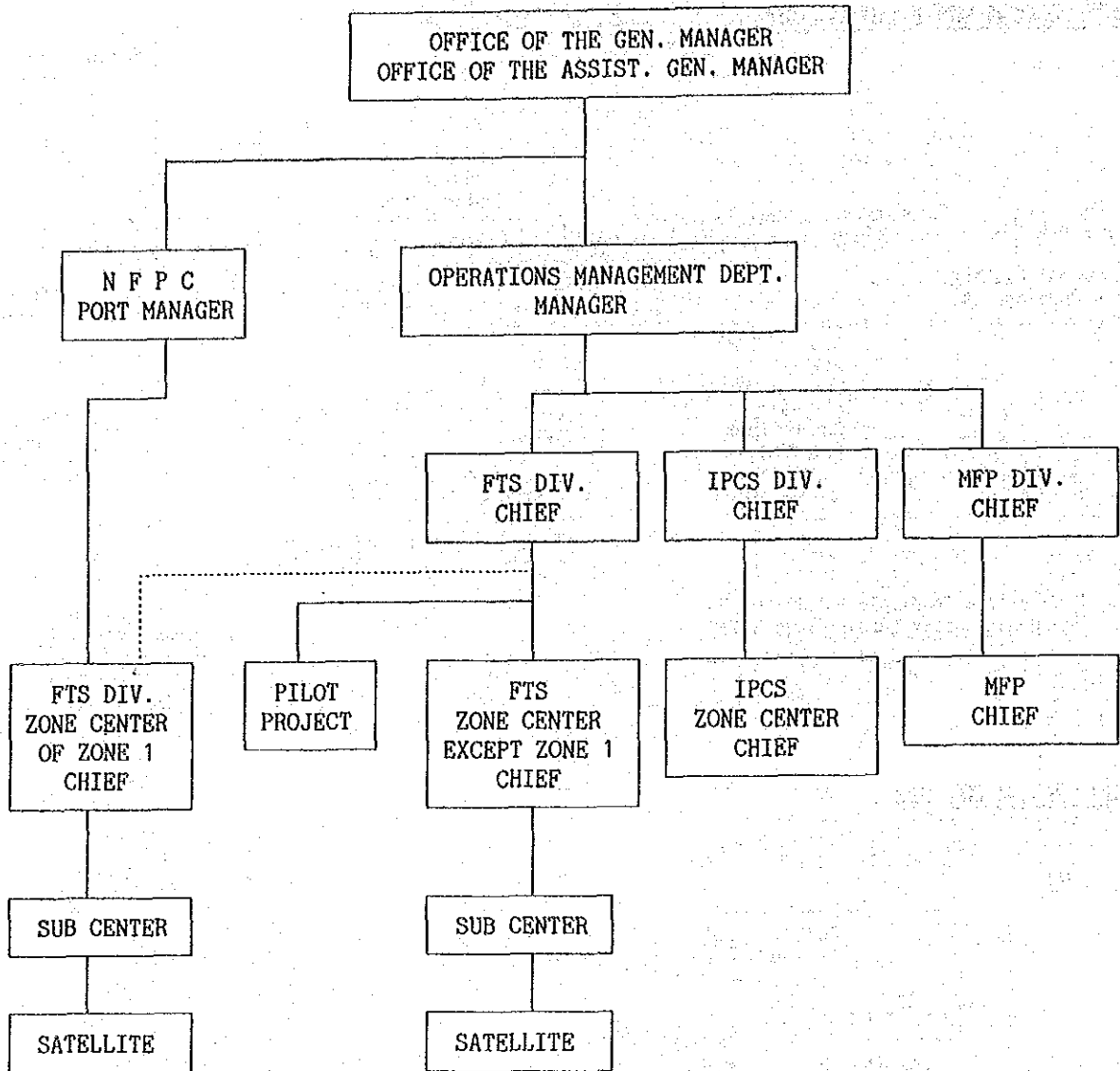


FIG. 16 PROCEDURE OF PLANNING, PROGRAMMING, BUDGETING AND IMPLEMENTATION OF PROJECTS



Legend : ——— Administrative Control
 Operational control

FIG. 17 PROPOSED MANAGEMENT ORGANIZATION FOR FTS

TABLE 10.1 MANAGEMENT SYSTEM OF FTS COMPONENT

I T E M	PFDA Direct Operation	Entrusting Operation On Payment Basis	Entrusting Operation On Commission Basis	Leasing Out to the Private Sector
(1) OFF-SHORE FACILITIES				
1.1 Fish transport vessel			○	
1.2 Training vessel	○			
1.3 Fish carrier vessel			○	
1.4 Payao			○	
(2) ON-LAND FACILITIES				
1. Building				
1-1 Office Building	○			
1-2 Insulated Fish Box Manufacturing Plant			○	
1-3 Shrimp Processing Plant			○ Navotas	○ Orani, Roxas
1-4 Salted / Dried Fish Processing Plant				○
1-5 Surimi Processing Plant			○	
1-6 Ice Making Plant				○
1-7 Workshop	○			
1-8 Electrical Substation	○			
1-9 Auction Hall	○			
2.1 FACILITY				
2-1 Antenna Tower	○			
2-2 Water Reservoir and Elevated Water Tank	○			
2-3 Fuel Oil Storage Tank	○			
2-4 Fresh Supply Water Treatment Facility	○			
2-5 Waste Water Treatment	○			
(3) EQUIPMENT				
3.1 Insulated truck		○		○ Orani, Roxas
3.2 Mobile ice making plant	○			
3.3 Mobile salting / drying plant	○			
3.4 Tools & machine for workshop	○			
3.5 Information / communication facilities	○			
3.6 Fish quality testing facilities	○			
3.7 Training / extension facilities	○			
3.8 Mobile fish store			○	
3.9 Fuel oil tank lorry	○			
3.10 Freshwater tank lorry	○			
3.11 Refrigerated truck				○
3.12 Cooking facilities for demonstration			○	
3.13 Marine showing facilities			○	
(4) IMPROVEMENT WORKS FOR INFRASTRUCTURE				
4.1 Rehabilitation for existing MFP				
4.2 Access road				
4.3 Extension for city water main				
4.4 Wiring electrical power primary line				
4.5 Reclamation				

11. CONCLUSIONS AND RECOMMENDATIONS

11. CONCLUSIONS AND RECOMMENDATIONS

(1) FTS Construction Plan

1) Pilot Project

It is desirable to build facilities and implement the equipment by 1990, or at the earliest possible date.

2) Projects by Zones and Prototype Site

Construction should commence in 1990 and be completed 5 years after commencement of construction. The work will be undertaken zone-by-zone, in a staggered fashion, to avoid any strain on the construction and operational systems. In the 6th year after commencement of construction, all the zones should be completed and ready to begin full operation.

The projects executed in the first stage should preferably be the pilot project, which is primarily aimed at transferring technical know-how; Zone 3 among the zones, because of its high profitability and also because it is an integrated fisheries development area; and as Pasacao is the representative of the prototype sites, and in consideration of the objective of spreading the FTS in the 52 prototype sites throughout the country, it is desirable that this site be included in the first stage of construction.

As for the second stage and other subsequent stages, emphasis will be placed on profitability, therefore construction should be undertaken in the order of Zone 6, Zone 1 and then Zone 2.

	1990	1991	1992	1993	1994
Pilot project	*****	-----			
Zone 1			*****	-----	
Zone 2				*****	-----
Zone 3	*****	-----			
Zone 6		*****	-----		
Pasacao	*****	-----			

Remarks: ***** construction period; ----- operation period

(2) FTS Operations Plan

The PFDA is responsible for the supervision of the entire project, with the participation of the private sector being necessary for its operation. In order to promote the smooth operation of this project, a Project Steering Council should be organized in conjunction with the private sector concerning the following points.

1) Pilot Project

It is desirable that PFDA take direct responsibility for the management of this project, with new technology for FTS being established through technical assistance from overseas. Technical assistance should include both bringing foreign experts to the Philippines and sending Philippine personnel abroad for technical training. The areas concerned with receiving technical assistance are presented below:

- a. FTS operations management
- b. Quality control of fish products
- c. Fish products processing

2) Carrier vessels and means of overland transportation

It is desirable that PFDA own these vessels and vehicles to take the initiative in making their assignment schedules, with their actual operations being handled with the participation of the fishermen and other private sectors. Basic agreement on the management of carrier vessels including operational method in detail is indispensable between PFDA and fishermen.

3) Fish Transport Vessels and Processing Plants

In order to actively promote the participation of the private sector in capitalization and technical areas, the formation of a joint management system consisting of PFDA and the private sector of

instituting a lease system of the facilities is desirable. PFDA should, however, make an important role for the shipping schedules of these vessels in order to provide benefits to the public and to exclude dominant use by a special group.

(3) Integration of FTS with MFP, IPCS and Other Related Projects

It is essential for PFDA to establish a Council in conjunction with related organizations, with PFDA taking the role of coordinator for construction and management of all the projects, in order to remove any constraints in the implementation of the projects.

- 1) As an organizational unit of the Central Office, PFDA, the FTS Division under Operation Management Dept. exercises direction and control over all the FTS operations. There are the Fishing Port Division and the IPCS Division under the Manager, Operations Management Dept., parallelly to the proposed FTS Division. The field offices to handle MFPs and IPCS might be established in the same area as in FTS. The Manager, Operations Management Dept. will be able to integrate operations in three functional areas; namely, MFP, IPCS and FTS, by directing/instructing the respective Division Chiefs under him. It is further desirable that, in the field, one Area Manager be responsible for performance of MFP, IPCS and FTS, for integrated operations.
- 2) Land acquisition for FTS sites: It will be necessary to hold discussion with the central government and those local autonomous bodies which possess the lands in question concerning the jurisdictional authority of controlling the lands.
- 3) Budget preparation and implementation plan for MFP renovation and improvement of access roads should proceed under the coordinated efforts of the DPWH and local municipalities.
- 4) For the implementation of electrical power, water works, and other related infrastructure, consultation with the relevant organizations is essential.

(4) Survey and Research

1) Establishment of an Information Control System for Fish Products

In order to make effective use of the planned new FTS, it is desirable to organize, as a back-up system to FTS, a fish information control system to collect and process information on the fish catch (at the point of catching), as well as market conditions at the location of consumption and the export market. Data on the volume of fish products and their distribution collected through surveys conducted regularly by BFAR (Bureau of Fisheries and Aquatic Resources) and stored at each state's respective fisheries bureau will be used as the basic information. And data related to the market and export conditions of fish products in the Metro Manila area, which will be collected by PFDA in the future, will also be used as the basic information. After the timely accumulation and processing of this data at NFPC, the information should be provided to the relevant parties in each and every area where FTS are to be implemented, in order to make adjustments in the nationwide balance of supply and demand of fish products as well as to contribute to the promotion of exports. It is desirable to conduct the surveys to develop a system that meets these objectives.

2) Development of a Monitoring System for Coastal Marine Resources Management

In order to secure fish products in FTS type B zones and prototype sites where municipal fisheries predominate, coastal marine resources management is an absolute must. In order to fulfill this task, it is necessary to accumulate information on the catch of fish on a permanent and regular basis, and to feed this back to the fish products collection system. A long-term research and survey system should be organized to make use of the aforementioned fish products information management system for this purpose. As establishment of such a system will require expert judgment, it would be desirable to get the cooperation of specialists from overseas.

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ANNEX 1 - LIST OF PERSONS INVOLVED

ANNEX 1 - LIST OF PERSONS INVOLVED

Name	Speciality	Position/Office
A. Japanese Side		
1.1 Advisory Committee		
(1) Satoshi Moriya	Chairman	Executive Director Relief Fund for Oil Pollution Damage in Fishing Ground
(2) Naotakae Ito	Fish Marketing	Assistant Director, Fish Marketing Division
(3) Masaru Okamoto	Fishery Development	International Affairs Division, Fishery Agency
1.2 Study Team		
(1) Tateo Kusano	Team Leader	System Science Consultants Inc.
(2) Akira Imai	Fishery Expert	System Science Consultants Inc.
(3) Shigeru Iwasaki	Fishery Economist	System Science Consultants Inc.
(4) Teru Yabana	Market and Transport Planner	System Science Consultants Inc.
(5) Sakae Negishi	Fish Quality Control Expert	System Science Consultants Inc.
(6) Hiroshi Kishimoto	Plant Engineer	System Science Consultants Inc.
(7) Seiichiro Kamimura	Communication and Information Planner	System Science Consultants Inc.
(8) Kyoichi Sugiyama	Architect	System Science Consultants Inc.
(9) Nobuo Tsuchihashi	Institutional Expert	System Science Consultants Inc.
(10) Hiroshi Hutami	Naval Architect	System Science Consultants Inc.
(11) Masao Ganke	Civil Engineer	System Science Consultants Inc.
B. Philippine Side		
(1) Malcom I. Sarmiento		General Manager, PFDA
(2) Facundo T. Yeneza, Jr.		Manager, Planning & Development Department, PFDA
(3) Nelso M. Davila		Chief, Project Planning Division
(4) Grace G. Santicanez		Chief, Planning Division
(5) Teodoro C. Catalla		Senior Economist

