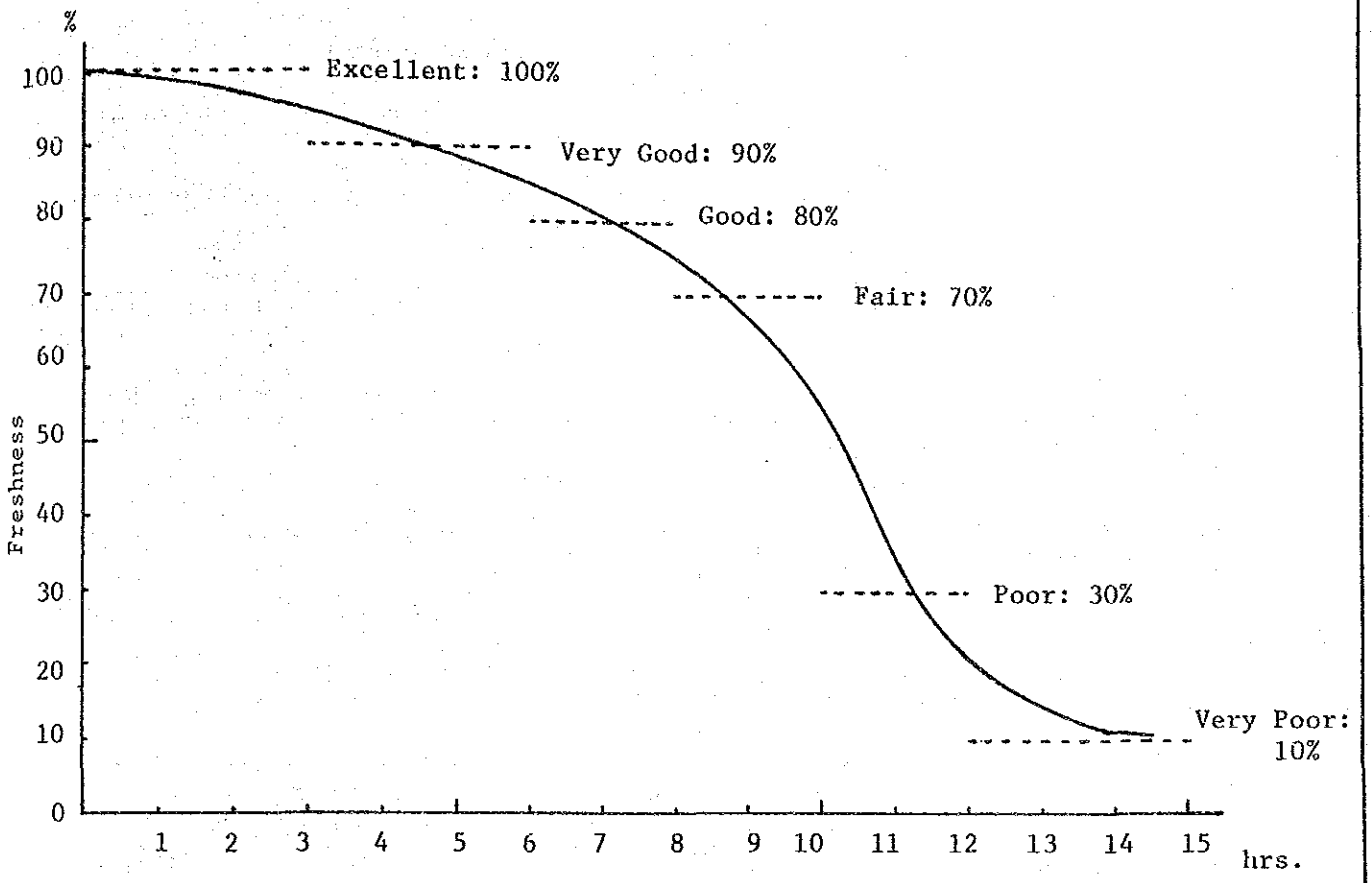


Source: Fish Marketing in Three Landing Areas: Iloilo, Bacolod and Zamboanga, Feb. 1978, BAECON and BFAR.

Fig. 11.1 FRESHNESS OF FISH BY TIME WITHOUT ICE

REPUBLIC OF THE PHILIPPINES
THE STUDY OF MASTER PLAN FOR THE NATIONWIDE ICE PLANTS AND COLD STORAGES NETWORK SYSTEM
JAPAN INTERNATIONAL COOPERATION AGENCY

Table 11.1 CLASSIFICATION OF FRESHNESS OF FISH

Unit: hour, day after catch

Classification of Freshness	Iloilo City	Bacolod City	
	With Cold Storage	With Cold Storage	Without Cold Storage
Excellent	24 hours	24 hours	1–3 hours
Very Good	4 days	2–3 days	3–6 hours
Good	6 days	3–4 days	6–8 hours
Fair (1)	10 days	4–5 days	8–10 hours
Poor (2)	15 days	5–6 days	11–12 hours
Very Poor	more than 15 days	7–10 days	13–24 hours

Remarks: (1) Fish has started to deteriorate.
(2) Fish has deteriorate, completely.

Source: Fish Marketing in Three Landing Areas, Iloilo, Bacolod and Zamboanga, Feburuary, 1978 by BAECON and BFAR.

Table 11.2 PROPORTION OF FISH PRODUCTION BY CLASS OF FISH AND AVERAGE ESTIMATED FISH PRICE BY ZONE

Zone	Proportion of Fish Production by Class of Fish (%)			Average Estimated Fish Price (₱/Kg)	
	1st Class	2nd Class	3rd Class	1983	1984
1	19.1	18.8	62.1	7.1	10.3
2	8.5	32.5	59.0	7.0	10.1
3	13.2	17.1	69.7	6.6	9.6
4	10.1	26.5	63.4	6.8	9.8
5	10.5	38.1	51.4	7.4	10.7
6	23.1	12.6	64.3	7.1	10.3
7	31.6	11.4	57.0	7.6	11.0
8	17.5	14.0	68.5	6.8	9.8
9	21.8	10.8	67.4	6.9	10.0
10	31.6	11.4	57.0	7.6	11.0
11	31.6	11.4	57.0	7.6	11.0
Average	19.9	18.6	61.5	7.1	10.3

Remarks: (1) Proportion of fish production by class of fish was provided by BFAR Statistics, 1982.
a. 1st class : spanish mackerels, bonitos, billfishes except fligate tunas and shrimps, prawns except acetes
b. 2nd class : perches, breams snappers, eels
c. 3rd class : others

(2) Fish prices in 1983 were assumed to be 11.5 ₱/kg for 1st class, 9.4₱/kg for 2nd class and 5.0₱/kg for 3rd class, by AOC data, PFDA.

(3) Price escalation of consumer price index of fish in Metro Manila was applied to price estimation in 1984, based on the provided data of Economic Indicators, Aug. 1984, NEDA.

Table 11.3 VOLUME OF FISH SUPPLIED WITH ICE BY IPCS SYSTEM

unit : tons

Zone	Year	Volume of fish with ice in fishing/harvesting				Volume of fish with ice in marketing/transportation		
		Commercial fisheries	Municipal fisheries	Aquaculture	Total	Within province	Outside province	Total
Zone 1	1990	115	184	1,218	1,517	253	728	981
	2000	500	482	3,215	4,197	885	2,136	3,021
Zone 2	1990	2,472	3,144	268	5,884	1,520	1,738	3,258
	2000	2,454	3,112	918	6,484	2,098	1,233	3,331
Zone 3	1990	1,346	5,138	5,593	12,077	1,850	6,961	8,811
	2000	1,445	5,958	6,050	13,453	2,318	7,223	9,541
Zone 4	1990	1,191	2,812	730	4,733	922	0	922
	2000	1,938	3,330	3,038	8,306	2,317	0	2,317
Zone 5	1990	112	7,304	75	7,491	550	4,336	4,886
	2000	156	7,060	240	7,456	930	3,762	4,692
Zone 6	1990	2,309	399	108	2,816	1,422	1,483	2,905
	200	6,731	680	572	7,983	2,728	4,983	7,711
Zone 7	1990	669	10,156	918	11,743	510	6,611	7,121
	2000	1,251	13,088	3,435	17,774	622	10,376	10,988
Zone 8	1990	314	8,264	688	9,266	955	4,803	5,758
	2000	342	10,106	2,422	12,870	995	6,691	7,686
Zone 9	1990	598	13,260	142	14,000	542	8,661	9,203
	2000	892	15,762	402	17,056	692	10,292	10,984
Zone 10	1990	15	4,766	75	4,856	808	2,089	2,897
	2000	19	5,922	248	6,189	1,165	2,557	3,722
Zone 11	1990	110	5,644	368	6,122	820	2,589	3,409
	2000	125	6,948	1,352	8,425	1,068	3,627	4,695
Proto-type	1990	6,598	35,562	4,963	47,123	3,632	12,814	16,446
	2000	6,058	33,434	6,902	46,394	4,199	13,243	17,442
Total	1990	15,849	96,633	15,146	127,628	13,784	52,813	66,597
	2000	21,911	105,882	28,794	156,587	20,017	66,123	86,140

Table 11.4 BENEFIT FROM THE ICE PLANTS OF IPCS SYSTEM M

Unit: 10^3 ₱/ Year

Zone	Year	in fishing/harvesting				in marketing/transportation			
		Commercial fisheries	Municipal fisheries	Aquaculture	Sub-total	Within province	Outside province	Sub-total	Total
Zone 1	1990	415	190	878	1,483	391	3,031	3,422	4,905
	2000	1,802	496	2,318	4,616	1,367	6,600	7,967	12,583
Zone 2	1990	8,739	3,175	189	12,103	2,303	5,266	7,569	19,672
	2000	8,675	3,143	649	12,467	3,178	3,736	6,914	19,381
Zone 3	1990	4,523	4,932	3,758	13,213	2,664	20,048	22,712	35,925
	2000	4,855	5,720	4,066	14,641	3,338	20,802	24,140	38,781
Zone 4	1990	4,085	2,756	501	7,342	1,355	0	1,355	8,697
	2000	6,802	3,263	2,084	12,149	3,406	0	3,406	15,555
Zone 5	1990	419	7,815	56	8,290	883	13,919	14,802	23,092
	2000	584	7,554	180	8,318	1,493	12,076	13,569	21,887
Zone 6	1990	8,324	3,699	78	12,101	2,197	4,582	6,779	18,880
	2000	24,265	6,304	412	30,981	4,215	15,397	19,612	50,593
Zone 7	1990	2,576	11,172	707	14,455	842	21,816	22,658	37,113
	2000	4,816	14,397	2,645	21,858	1,026	34,241	35,267	57,125
Zone 8	1990	1,077	8,099	472	9,648	1,404	14,120	15,524	25,172
	2000	1,173	9,903	1,661	12,737	1,463	19,672	21,135	33,872
Zone 9	1990	2,093	13,260	99	15,452	813	25,983	26,796	42,248
	2000	3,122	15,762	281	19,165	1,038	30,876	31,914	51,079
Zone 10	1990	58	5,243	58	5,359	1,333	6,894	8,227	13,586
	2000	73	6,514	191	6,778	1,922	8,438	10,360	17,138
Zone 11	1990	424	6,208	283	6,915	1,353	8,544	9,897	16,812
	2000	481	7,643	1,041	9,165	1,762	11,969	13,731	22,896
Proto-type	1990	23,790	36,631	3,580	64,001	5,610	39,597	45,207	109,207
	2000	21,832	34,436	4,977	61,245	6,486	40,922	47,408	108,653
Total	1990	66,523	103,180	10,659	170,362	21,148	163,800	184,948	355,309
	2000	78,480	115,135	20,505	214,120	30,694	204,729	235,423	449,543

Remarks: The constant price of 1984 is used.

Table 11.5 MONTHLY DIFFERENCES INDEX OF FISH PRICE BY REGION IN 1983

Region	AOC	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
I	Magsaysay	115	111	112	115	107	101	100	101	104	107	112	120
IV	Dalahican	123	125	100	132	147	138	145	138	140	148	153	156
	Atimonan	141	134	138	134	126	105	108	102	100	108	145	161
V	Camarigan	100	148	100	116	110	108	117	123	113	112	112	135
	Mercedes	130	124	124	128	127	133	134	123	134	129	133	100
	Sabang	230	139	121	100	107	108	121	162	162	208	243	267
VI	Muelle Loney	151	134	121	126	100	118	103	126	136	127	186	215
	Pala-pala	131	118	131	125	100	110	100	110	119	142	173	201
IX	Zamboanga	102	101	100	102	102	102	105	104	106	107	111	120
X	Cogon	103	105	107	113	100	105	112	119	121	122	135	153

Remarks: The lowest price was set at 100.

Source: *Fish Distribution Study by Navotas Fishing Port and Area Operation Center in 1983*, PFDA, 1984.

Table 11.6 REGIONAL DIFFERENCES INDEX OF FISH PRICE BY FISH SPECIES IN 1983

Fish Species	NCR	Reg. I	Reg. IV	Reg. V	Reg. VI	Reg. VII	Reg. IX	Reg. X
Tambacor/Albacor	137	119	193	121	100	133	-	149
Tanguigue	274	302	300	100	216	182	169	206
Bangus	140	155	140	-	-	108	100	122
Lapu-lapu	137	-	-	100	129	118	105	-
Bisugo	150	-	-	100	105	-	114	128
Galunggong	257	300	304	219	154	234	100	162
Tulingan	130	-	140	100	120	112	102	116
Dilis	-	219	271	100	143	-	157	333
Tanban	220	-	280	100	170	160	145	270

Remarks: The lowest price was set at 100.

Source: Fish Distribution Study of Navotas Fishing Port and Area Operation Center in 1983, conducted by PFDA, 1984.

Table 11.7 EXPORT PRICE OF FROZEN/CHILLED FISH IN 1982

	Quantity (tons)	Amount (10^3 ₱)	Unit Price (₱/Kg)
Fish	19,506	177,515	9.1
Crustaceans	4,392	277,154	63.1
Molluscs	885	25,442	28.8
Total	24,783	480,111	19.4

Source: 1982 Fisheries Statistics of the Philippines, BFAR, 1982.

Table 11.8 WHOLESALE PRICE OF FISH IN 1982

Unit: ₱/Kg

Region	Tuna	Shrimp
NCR	10.3	58.6
VI	7.1	53.7
VII	7.8	-
IX	-	55.6
Average	8.4	56.0
Export margin	8%	11%

Remarks: Share of export margin = (export price - wholesale price)/ export price.

Source: Fish Distribution Study of Navotas Fishing Port and Area Operation Center in 1983, conducted by PFDA, 1984.

Table 11.9 VOLUME OF FISH STORED IN COLD STORAGES BY ZONE SYSTEM IN 2000

Unit: tons/year

Zone	For Export	For Doemestic Consumption	Total
1	834	0	834
2	0	0	0
3	10	164	174
4	173	0	173
5	0	0	0
6	2,536	0	2,536
7	100	952	1,052
8	1	200	201
9	17	682	699
10	0	0	0
11	0	0	0
Total	3,671	1,998	5,669

Table 11.10 BENEFIT FROM COLD STORAGES BY ZONE SYSTEM IN 2000

Unit: 10^3₱ at 1984 prices

Zone	For Export	For Domestic Consumption	Total
1	2,002	0	2,002
2	0	0	0
3	24	590	614
4	415	0	415
5	0	0	0
6	6,086	0	6,086
7	240	3,427	3,667
8	2	720	722
9	41	2,455	2,496
10	0	0	0
11	0	0	0
Total	8,810	7,192	16,002

Table 11.11 ECONOMIC COST FOR CONSTRUCTION

Unit: 10^3 ₱

Zone	1990						2000				
	Land Aquisition	Civil Works	Bldg.	Plant	Other Equip.	Total	Civil Works	Bldg.	Plant	Other Equip.	Total
1	111	5,160	10,636	7,139	4,510	27,556	-	8,723	9,939	1,143	19,805
2	273	11,197	13,054	13,688	3,381	41,593	-	-	-	-	-
3	362	6,808	18,374	22,161	7,515	55,220	-	7,373	4,613	1,201	13,187
4	53	3,305	9,441	8,027	1,832	22,658	-	7,390	8,530	-	15,920
5	535	1,293	15,876	16,193	10,296	44,193	-	-	-	-	-
6	928	1,922	12,974	9,979	2,415	28,218	-	16,090	20,877	1,143	38,110
7	1,376	1,421	26,504	28,084	10,265	67,650	-	19,534	11,183	1,616	32,333
8	768	1,479	17,682	26,253	3,825	50,007	-	7,669	4,615	1,201	13,485
9	1,241	1,348	28,142	31,574	5,894	68,199	-	17,449	9,003	1,461	27,913
10	407	559	10,591	11,617	3,850	27,024	-	-	-	-	-
11	877	1,318	22,826	16,138	10,412	51,571	-	-	-	-	-
Proto-type	3,791	1,345	165,367	225,623	0	396,126	-	-	-	-	-
Total	10,722	37,155	351,467	416,476	64,195	880,058	-	84,228	68,760	7,765	160,753

Remarks: Land reclamation cost of zone 1 was provided by Municipal Fishing Port of Hogonoy, Bulacan, Jan. 1984, MPWH.

Table 11.12 OPERATION AND MAINTENANCE COST

Unit: P10⁶/year

Zone	1990 Energy	1990 Salaries Wages	1990 Transportation	1990 Maintenance	1990 *Misc.	1990 Total	2000 Energy	2000 Salaries Wages	2000 Transportation	2000 Maintenance	2000 *Misc.	2000 Total
1	309	139	88	953	149	1,638	934	153	899	1,725	371	4,082
2	953	139	1,459	1,357	391	4,299	965	139	1,478	1,357	394	4,333
3	2,663	156	573	2,103	550	6,045	3,229	165	618	2,615	663	7,290
4	537	101	23	809	147	1,617	1,074	105	44	1,457	268	2,948
5	527	118	2,607	1,814	507	5,573	535	118	2,475	1,814	494	5,436
6	359	55	15	1,028	146	1,603	1,206	69	42	2,612	393	4,322
7	1,107	156	441	2,727	443	4,874	1,922	179	2,110	3,953	816	8,980
8	2,116	126	110	2,049	440	4,841	2,923	136	177	2,570	581	6,387
9	1,299	133	320	2,731	448	4,931	1,823	142	388	3,778	613	6,774
10	329	114	76	1,097	162	1,778	383	114	97	1,097	169	1,860
11	1,226	140	438	2,025	383	4,212	1,482	140	728	2,025	438	4,813
Sub-total	11,425	1,377	6,150	18,693	3,766	41,411	16,476	1,460	9,056	25,003	5,200	57,225
Prototype	6,327	1,591	54	16,242	2,421	26,635	6,327	1,591	54	16,242	2,421	26,635
Total	17,752	2,968	6,204	34,935	6,187	68,046	22,803	3,051	9,110	41,245	7,621	83,860

Remarks: *; Miscellaneous cost corresponds to 10% of total operation & maintenance cost.

Table 11.13 ECONOMIC EVALUATION

System	NPV (10^6₱)	B/C	IRR (%)
Zone System			
Ice Plant	646	1.90	44.3
Cold Storage	▲ 14	0.48	2.9
Sub-total	632	1.85	44.1
Prototype System	9	1.02	20.5
Total	641	1.50	33.9

Remarks: NPV and B/C were estimated based on 20% of discount rate.

Table 11.14 SENSITIVITY TEST OF EIRR

Unit: %

	Cost		
Benefit	Base	+10%	+20%
Base	33.9	30.2	27.0
-10%	29.8	26.4	23.6
-20%	25.7	22.6	20.0

. Table 11.15 MARKET PRICE OF ICE IN 1984

Zone	Municipalty/ City inspected	Ice Price (₱/Block)	Average Ice Price (₱/Block)	Average Ice Price (₱/kg)
1	Orani	51	51.3	0.38
	Orion	45	-	-
	San Fernando	58	-	-
2	Jose	40	51.0	0.38
	Mercedes	62	-	-
3	Balasom	72	69.0	0.51
	Iloilo City	66	-	-
4	Ubay	88	69.0	0.51
	Tagbilaran	50	-	-
5	Surigao City	64	64.0	0.47
6	General Santos	40	40.0	0.30
7	Margosatubig	47	46.0	0.34
	Pagadian City	45	-	-
8	Bayawan	52	52.0	0.39
9	-	-	-	0.34 *
10	-	-	-	0.34 *
11	-	-	-	0.34 *

Remarks : * Ice price in Zones 9, 10, 11 is assumed to be the same as that in Zone 7.

Source : Field survey in Phase I and Phase II of the Study

Table 11.16 INCOME STATEMENT AND CASH FLOW OF ZONE SYSTEM -1.5 TIMES OF ICE PRICE THAN WHAT IT IS IN 1984-

unit: 10^3 ₱

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
(1) Income Statement										
REVENUE	0	62294	63461	64628	65795	66962	68128	69295	70462	71629
OPERATION COST	0	41362	42127	42892	43657	44422	45188	45953	46718	47483
INTEREST	20387	20387	20387	20387	20387	20387	19028	17669	16310	14951
DEPRECIATION	0	18404	18404	18404	18404	18404	18404	18404	18404	18404
TOTAL EXPENSES	20387	80153	80918	81683	82448	83213	82620	82026	81432	80838
INCOM BEF.DAI	0	20932	21334	21736	22138	22540	22940	23342	23744	24146
PROFIT	-20387	-17859	-17457	-17055	-16653	-16251	-14492	-12731	-10970	-9208
ACCUMULATED PROFIT	-20387	-38246	-55703	-72758	-89411	-105662	-120154	-132885	-143854	-153063
(2) Cash Flow										
BALANCE AT BEGINNING	0	0	0	0	0	0	0	0	0	0
EQUITY	71645	0	0	0	0	0	0	0	0	0
LOAN	407740	0	0	0	0	0	0	0	0	0
GOVERNMENT FUND	20387	0	0	0	0	25030	23271	21509	19748	17987
DEPRECIATION	0	18404	18404	18404	18404	18404	18404	18404	18404	18404
PROFIT	-20387	-17859	-17457	-17055	-16653	-16251	-14492	-12731	-10970	-9208
TOTAL SOURCE	479385	545	947	1349	1751	27183	27183	27183	27183	27183
CONSTRUCTION	479385	0	0	0	0	0	0	0	0	0
REINVESTMENT	0	0	0	0	0	0	0	0	0	0
LOAN REPAYMENT	0	0	0	0	0	27183	27183	27183	27183	27183
GOV. FUND REPAYMENT	0	545	947	1349	1751	0	0	0	0	0
TOTAL USE	479385	545	947	1349	1751	27183	27183	27183	27183	27183
BALANCE AT END	0	0	0	0	0	0	0	0	0	0
BALANCE OF GOV.FUND	20387	19842	18895	17546	15795	40825	64095	85605	105353	123340

YEAR	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
(1) Income Statement										
REVENUE	72796	99158	99158	99158	99158	99158	99158	99158	99158	99158
OPERATION COST	48248	57195	57195	57195	57195	57195	57195	57195	57195	57195
INTEREST	20899	19539	18180	16821	15462	14103	12257	10410	8564	6718
DEPRECIATION	18404	25041	25041	25041	25041	25041	25041	25041	25041	25041
TOTAL EXPENSES	87551	101775	100416	99057	97698	96339	94493	92646	90800	88954
INCOM BEF.DAI	24548	41963	41963	41963	41963	41963	41963	41963	41963	41963
PROFIT	-14755	-2617	-1258	101	1460	2819	4665	6512	8358	10204
ACCUMULATED PROFIT	-167817	-170435	-171693	-171592	-170132	-167313	-162647	-156136	-147778	-137574
(2) Cash Flow										
BALANCE AT BEGINNING	0	0	0	0	0	0	0	0	0	0
EQUITY	14659	0	0	0	0	0	0	0	0	0
LOAN	146144	0	0	0	0	0	0	0	0	0
GOVERNMENT FUND	23533	4759	3400	2041	682	9065	7219	5373	3527	1680
DEPRECIATION	18404	25041	25041	25041	25041	25041	25041	25041	25041	25041
PROFIT	-14755	-2617	-1258	101	1460	2819	4665	6512	8358	10204
TOTAL SOURCE	187986	27183	27183	27183	27183	36926	36926	36926	36926	36926
CONSTRUCTION	160803	0	0	0	0	0	0	0	0	0
REINVESTMENT	0	0	0	0	0	0	0	0	0	0
LOAN REPAYMENT	27183	27183	27183	27183	27183	36926	36926	36926	36926	36926
GOV. FUND REPAYMENT	0	0	0	0	0	0	0	0	0	0
TOTAL USE	187986	27183	27183	27183	27183	36926	36926	36926	36926	36926
BALANCE AT END	0	0	0	0	0	0	0	0	0	0
BALANCE OF GOV.FUND	146873	151632	155032	157073	157755	166820	174039	179412	182939	184619

YEAR	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(1) Income Statement												
REVENUE	99158	99158	99158	99158	99158	99158	99158	99158	99158	99158	99158	99158
OPERATION COST	57195	57195	57195	57195	57195	57195	57195	57195	57195	57195	57195	57195
INTEREST	4871	4384	3897	3410	2923	2436	1949	1461	974	487	0	0
DEPRECIATION	25041	25041	25041	25041	25041	25041	25041	25041	25041	25041	25041	18839
TOTAL EXPENSES	87108	86620	86133	85646	85159	84672	84185	83697	83210	82723	82236	76034
INCOM BEF.DAI	41963	41963	41963	41963	41963	41963	41963	41963	41963	41963	41963	41963
PROFIT	12051	12538	13025	13512	13999	14486	14973	15461	15948	16435	16922	23124
ACCUMULATED PROFIT	-125523	-112985	-99960	-86448	-72449	-57963	-42990	-27529	-11581	4853	21776	44900
(2) Cash Flow												
BALANCE AT BEGINNING	0	0	0	0	0	0	0	0	0	0	0	0
EQUITY	0	0	0	0	0	0	0	0	0	0	0	0
LOAN	0	0	0	0	0	0	0	0	0	0	0	0
GOVERNMENT FUND	0	227212	0	0	0	0	0	0	0	0	0	0
DEPRECIATION	25041	25041	25041	25041	25041	25041	25041	25041	25041	25041	25041	18839
PROFIT	12051	12538	13025	13512	13999	14486	14973	15461	15948	16435	16922	23124
TOTAL SOURCE	37092	264791	38066	38553	39040	39527	40014	40502	40989	41476	41963	41963
CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0
REINVESTMENT	0	235048	0	0	0	0	0	0	0	0	0	0
LOAN REPAYMENT	9743	9743	9743	9743	9743	9743	9743	9743	9743	9743	0	0
GOV. FUND REPAYMENT	27349	0	28323	28810	29297	29784	30272	30759	31246	31733	41963	41963
TOTAL USE	37092	264791	38066	38553	39040	39527	40014	40502	40989	41476	41963	41963
BALANCE AT END	0	0	0	0	0	0	0	0	0	0	0	0
BALANCE OF GOV.FUND	157270	384483	356160	327350	298053	268268	237997	207238	175992	144260	102297	60334

Table 11.17 INCOME STATEMENT AND CASH FLOW OF PROTOTYPE -1.5 TIMES OF ICE PRICE THAN WHAT IT IS IN 1984-

unit: 10^3P

	YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
(1)	Income Statement										
	REVENUE	0	28344	28344	28344	28344	28344	28344	28344	28344	28344
	OPERATION COST	0	26635	26635	26635	26635	26635	26635	26635	26635	26635
	INTEREST	17991	17991	17991	17991	17991	17991	16792	15592	14393	13193
	DEPRECIATION	0	16793	16793	16793	16793	16793	16793	16793	16793	16793
	TOTAL EXPENSES	17991	61419	61419	61419	61419	61419	60220	59020	57821	56621
	INCOM BEF.DEI	0	1709	1709	1709	1709	1709	1709	1709	1709	1709
	PROFIT	-17991	-33075	-33075	-33075	-33075	-33075	-31876	-30676	-29477	-28277
	ACCUMULATED PROFIT	-17991	-51066	-84141	-117216	-150291	-183366	-215242	-245918	-275395	-303672
(2)	Cash Flow										
	BALANCE AT BEGINNING	0	0	0	0	0	0	0	0	0	0
	EQUITY	31169	0	0	0	0	0	0	0	0	0
	LOAN	359821	0	0	0	0	0	0	0	0	0
	GOVERNMENT FUND	17991	16282	16282	16282	16282	40270	39071	37871	36672	35473
	DEPRECIATION	0	16793	16793	16793	16793	16793	16793	16793	16793	16793
	PROFIT	-17991	-33075	-33075	-33075	-33075	-33075	-31876	-30676	-29477	-28277
	TOTAL SOURCE	390990	0	0	0	0	23988	23988	23988	23988	23988
	CONSTRUCTION	390990	0	0	0	0	0	0	0	0	0
	REINVESTMENT	0	0	0	0	0	0	0	0	0	0
	LOAN REPAYMENT	0	0	0	0	0	23988	23988	23988	23988	23988
	GOV. FUND REPAYMENT	0	0	0	0	0	0	0	0	0	0
	TOTAL USE	390990	0	0	0	0	23988	23988	23988	23988	23988
	BALANCE AT END	0	0	0	0	0	0	0	0	0	0
	BALANCE OF GOV.FUND	17991	34273	50555	66837	83119	123390	162460	200331	237003	272476

	YEAR	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
(1)	Income Statement										
	REVENUE	28344	28344	28344	28344	28344	28344	28344	28344	28344	28344
	OPERATION COST	26635	26635	26635	26635	26635	26635	26635	26635	26635	26635
	INTEREST	11994	10795	9595	8396	7196	5997	4798	3598	2399	1199
	DEPRECIATION	16793	16793	16793	16793	16793	16793	16793	16793	16793	16793
	TOTAL EXPENSES	55422	54223	53023	51824	50624	49425	48226	47026	45827	44627
	INCOM BEF.DEI	1709	1709	1709	1709	1709	1709	1709	1709	1709	1709
	PROFIT	-27078	-25879	-24679	-23480	-22280	-21081	-19882	-18682	-17483	-16283
	ACCUMULATED PROFIT	-330750	-356629	-381308	-404788	-427068	-448150	-468031	-486713	-504196	-520479
(2)	Cash Flow										
	BALANCE AT BEGINNING	0	0	0	0	0	0	0	0	0	0
	EQUITY	0	0	0	0	0	0	0	0	0	0
	LOAN	0	0	0	0	0	0	0	0	0	0
	GOVERNMENT FUND	34273	33074	31874	30675	29476	28276	27077	25877	24678	23479
	DEPRECIATION	16793	16793	16793	16793	16793	16793	16793	16793	16793	16793
	PROFIT	-27078	-25879	-24679	-23480	-22280	-21081	-19882	-18682	-17483	-16283
	TOTAL SOURCE	23988	23988	23988	23988	23988	23988	23988	23988	23988	23988
	CONSTRUCTION	0	0	0	0	0	0	0	0	0	0
	REINVESTMENT	0	0	0	0	0	0	0	0	0	0
	LOAN REPAYMENT	23988	23988	23988	23988	23988	23988	23988	23988	23988	23988
	GOV. FUND REPAYMENT	0	0	0	0	0	0	0	0	0	0
	TOTAL USE	23988	23988	23988	23988	23988	23988	23988	23988	23988	23988
	BALANCE AT END	0	0	0	0	0	0	0	0	0	0
	BALANCE OF GOV.FUND	306749	339822	371697	402372	431847	460123	487200	513077	537755	561233

	YEAR	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(1)	Income Statement												
	REVENUE	28344	28344	28344	28344	28344	28344	28344	28344	28344	28344	28344	28344
	OPERATION COST	26635	26635	26635	26635	26635	26635	26635	26635	26635	26635	26635	26635
	INTEREST	0	0	0	0	0	0	0	0	0	0	0	0
	DEPRECIATION	16793	16793	16793	16793	16793	16793	16793	16793	16793	16793	16793	11281
	TOTAL EXPENSES	43428	43428	43428	43428	43428	43428	43428	43428	43428	43428	43428	37916
	INCOM BEF.DEI	1709	1709	1709	1709	1709	1709	1709	1709	1709	1709	1709	1709
	PROFIT	-15084	-15084	-15084	-15084	-15084	-15084	-15084	-15084	-15084	-15084	-15084	-9572
	ACCUMULATED PROFIT	-535563	-550647	-565731	-580815	-595900	-610983	-626067	-641151	-656235	-671319	-686403	-695975
(2)	Cash Flow												
	BALANCE AT BEGINNING	0	0	0	0	0	0	0	0	0	0	0	0
	EQUITY	0	0	0	0	0	0	0	0	0	0	0	0
	LOAN	0	0	0	0	0	0	0	0	0	0	0	0
	GOVERNMENT FUND	0	223914	0	0	0	0	0	0	0	0	0	0
	DEPRECIATION	16793	16793	16793	16793	16793	16793	16793	16793	16793	16793	16793	11281
	PROFIT	-15084	-15084	-15084	-15084	-15084	-15084	-15084	-15084	-15084	-15084	-15084	-9572
	TOTAL SOURCE	1709	225623	1709	1709	1709	1709	1709	1709	1709	1709	1709	1709
	CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0
	REINVESTMENT	0	225623	0	0	0	0	0	0	0	0	0	0
	LOAN REPAYMENT	0	0	0	0	0	0	0	0	0	0	0	0
	GOV. FUND REPAYMENT	1709	0	1709	1709	1709	1709	1709	1709	1709	1709	1709	1709
	TOTAL USE	1709	225623	1709	1709	1709	1709	1709	1709	1709	1709	1709	1709
	BALANCE AT END	0	0	0	0	0	0	0	0	0	0	0	0
	BALANCE OF GOV.FUND	559524	783438	781729	780020	778311	776602	774893	773184	771475	769766	768057	766348

Table 11.18 INCOME STATEMENT AND CASH FLOW OF ZONE SYSTEM -2.0 TIMES OF ICE PRICE THAN WHAT IT IS IN 1984-

unit: 10^3¥

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
(1) Income Statement										
REVENUE	0	83059	84615	86171	87727	89283	90837	92393	93949	95505
OPERATION COST	0	41362	42127	42892	43657	44422	45188	45953	46718	47483
INTEREST	20387	20387	20387	20387	20387	20387	19028	17669	16310	14951
DEPRECIATION	0	18404	18404	18404	18404	18404	18404	18404	18404	18404
TOTAL EXPENSES	20387	80153	80918	81683	82448	83213	82620	82026	81432	80838
INCOM BEF.D&I	0	41697	42488	43279	44070	44861	45649	46440	47231	48022
PROFIT	-20387	2906	3697	4488	5279	6070	8217	10367	12517	14668
ACCUMULATED PROFIT	-20387	-17481	-13784	-9296	-4017	2053	10270	20638	33155	47822
(2) Cash Flow										
BALANCE AT BEGINNING	0	0	923	23024	45916	69599	66890	66329	67918	71656
EQUITY	71645	0	0	0	0	0	0	0	0	0
LOAN	407740	0	0	0	0	0	0	0	0	0
GOVERNMENT FUND	20387	0	0	0	0	0	0	0	0	0
DEPRECIATION	0	18404	18404	18404	18404	18404	18404	18404	18404	18404
PROFIT	-20387	2906	3697	4488	5279	6070	8217	10367	12517	14668
TOTAL SOURCE	479385	21310	23024	45916	69599	94073	93512	95100	98839	104728
CONSTRUCTION	479385	0	0	0	0	0	0	0	0	0
REINVESTMENT	0	0	0	0	0	0	0	0	0	0
LOAN REPAYMENT	0	0	0	0	0	27183	27183	27183	27183	27183
GOV. FUND REPAYMENT	0	20387	0	0	0	0	0	0	0	0
TOTAL USE	479385	20387	0	0	0	27183	27183	27183	27183	27183
BALANCE AT END	0	923	23024	45916	69599	66890	66329	67918	71656	77545
BALANCE OF GOV.FUND	20387	0	0	0	0	0	0	0	0	0

YEAR	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
(1) Income Statement										
REVENUE	97061	126877	126877	126877	126877	126877	126877	126877	126877	126877
OPERATION COST	48248	57195	57195	57195	57195	57195	57195	57195	57195	57195
INTEREST	20899	19539	18180	16821	15462	14103	12257	10410	8564	6718
DEPRECIATION	18404	25041	25041	25041	25041	25041	25041	25041	25041	25041
TOTAL EXPENSES	87551	101775	100416	99057	97698	96339	94493	92646	90800	88954
INCOM BEF.D&I	48813	69682	69682	69682	69682	69682	69682	69682	69682	69682
PROFIT	9510	25102	26461	27820	29179	30538	32384	34231	36077	37923
ACCUMULATED PROFIT	57333	82435	108895	136715	165894	196432	228817	263047	299124	337047
(2) Cash Flow										
BALANCE AT BEGINNING	77545	78277	101237	125556	151234	178272	196925	217425	239771	263963
EQUITY	14659	0	0	0	0	0	0	0	0	0
LOAN	146144	0	0	0	0	0	0	0	0	0
GOVERNMENT FUND	0	0	0	0	0	0	0	0	0	0
DEPRECIATION	18404	25041	25041	25041	25041	25041	25041	25041	25041	25041
PROFIT	9510	25102	26461	27820	29179	30538	32384	34231	36077	37923
TOTAL SOURCE	266263	128420	152739	178417	205454	233851	254350	276697	300889	326928
CONSTRUCTION	160803	0	0	0	0	0	0	0	0	0
REINVESTMENT	0	0	0	0	0	0	0	0	0	0
LOAN REPAYMENT	27183	27183	27183	27183	27183	36926	36926	36926	36926	36926
GOV. FUND REPAYMENT	0	0	0	0	0	0	0	0	0	0
TOTAL USE	187986	27183	27183	27183	27183	36926	36926	36926	36926	36926
BALANCE AT END	78277	101237	125556	151234	178272	196925	217425	239771	263963	290002
BALANCE OF GOV.FUND	0	0	0	0	0	0	0	0	0	0

YEAR	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(1) Income Statement												
REVENUE	126877	126877	126877	126877	126877	126877	126877	126877	126877	126877	126877	126877
OPERATION COST	57195	57195	57195	57195	57195	57195	57195	57195	57195	57195	57195	57195
INTEREST	4871	4384	3897	3410	2923	2436	1949	1461	974	487	0	0
DEPRECIATION	25041	25041	25041	25041	25041	25041	25041	25041	25041	25041	25041	18839
TOTAL EXPENSES	87108	86620	86133	85646	85159	84672	84185	83697	83210	82723	82236	76034
INCOM BEF.D&I	69682	69682	69682	69682	69682	69682	69682	69682	69682	69682	69682	69682
PROFIT	39770	40257	40744	41231	41718	42205	42692	43180	43667	44154	44641	50843
ACCUMULATED PROFIT	376817	417074	457818	499048	540767	582972	625664	668844	712510	756664	801305	852148
(2) Cash Flow												
BALANCE AT BEGINNING	290002	345070	145576	201618	258147	315164	372667	430657	489135	548100	607552	677234
EQUITY	0	0	0	0	0	0	0	0	0	0	0	0
LOAN	0	0	0	0	0	0	0	0	0	0	0	0
GOVERNMENT FUND	0	0	0	0	0	0	0	0	0	0	0	0
DEPRECIATION	25041	25041	25041	25041	25041	25041	25041	25041	25041	25041	25041	18839
PROFIT	39770	40257	40744	41231	41718	42205	42692	43180	43667	44154	44641	50843
TOTAL SOURCE	354813	410367	211361	267890	324906	382410	440400	498878	557843	617295	677234	746916
CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0
REINVESTMENT	0	255048	0	0	0	0	0	0	0	0	0	0
LOAN REPAYMENT	9743	9743	9743	9743	9743	9743	9743	9743	9743	9743	0	0
GOV. FUND REPAYMENT	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL USE	9743	264791	9743	9743	9743	9743	9743	9743	9743	9743	0	0
BALANCE AT END	345070	145576	201618	258147	315164	372667	430657	489135	548100	607552	677234	746916
BALANCE OF GOV.FUND	0	0	0	0	0	0	0	0	0	0	0	0

Table 11.19 INCOME STATEMENT AND CASH FLOW OF PROTOTYPE -2.0 TIMES OF ICE PRICE THAN WHAT IT IS IN 1984-

unit: 10^3P

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
(1) Income Statement										
REVENUE	0	37792	37792	37792	37792	37792	37792	37792	37792	37792
OPERATION COST	0	26635	26635	26635	26635	26635	26635	26635	26635	26635
INTEREST	17991	17991	17991	17991	17991	17991	16792	15592	14393	13193
DEPRECIATION	0	16793	16793	16793	16793	16793	16793	16793	16793	16793
TOTAL EXPENSES	17991	61419	61419	61419	61419	61419	60220	59020	57821	56621
INCOM BEF.081	0	11157	11157	11157	11157	11157	11157	11157	11157	11157
PROFIT	-17991	-23627	-23627	-23627	-23627	-23627	-22428	-21228	-20029	-18829
ACCUMULATED PROFIT	-17991	-41618	-65245	-88872	-112499	-136126	-158554	-179782	-199811	-218640
(2) Cash Flow										
BALANCE AT BEGINNING	0	0	0	0	0	0	0	0	0	0
EQUITY	31169	0	0	0	0	0	0	0	0	0
LOAN	359821	0	0	0	0	0	0	0	0	0
GOVERNMENT FUND	17991	6834	6834	6834	6834	30822	29623	28423	27224	26025
DEPRECIATION	0	16793	16793	16793	16793	16793	16793	16793	16793	16793
PROFIT	-17991	-23627	-23627	-23627	-23627	-23627	-22428	-21228	-20029	-18829
TOTAL SOURCE	390990	0	0	0	0	23988	23988	23988	23988	23988
CONSTRUCTION	390990	0	0	0	0	0	0	0	0	0
REINVESTMENT	0	0	0	0	0	0	0	0	0	0
LOAN REPAYMENT	0	0	0	0	0	23988	23988	23988	23988	23988
GOV. FUND REPAYMENT	0	0	0	0	0	0	0	0	0	0
TOTAL USE	390990	0	0	0	0	23988	23988	23988	23988	23988
BALANCE AT END	0	0	0	0	0	0	0	0	0	0
BALANCE OF GOV.FUND	17991	24825	31659	38493	45327	76149	105772	134195	161419	187444

YEAR	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
(1) Income Statement										
REVENUE	37792	37792	37792	37792	37792	37792	37792	37792	37792	37792
OPERATION COST	26635	26635	26635	26635	26635	26635	26635	26635	26635	26635
INTEREST	11994	10795	9595	8396	7196	5997	4798	3598	2399	1199
DEPRECIATION	16793	16793	16793	16793	16793	16793	16793	16793	16793	16793
TOTAL EXPENSES	55422	54223	53023	51824	50624	49425	48226	47026	45827	44627
INCOM BEF.081	11157	11157	11157	11157	11157	11157	11157	11157	11157	11157
PROFIT	-17630	-16431	-15231	-14032	-12832	-11633	-10434	-9234	-8035	-6835
ACCUMULATED PROFIT	-236270	-252701	-267932	-281964	-294797	-306430	-316863	-326097	-334132	-340967
(2) Cash Flow										
BALANCE AT BEGINNING	0	0	0	0	0	0	0	0	0	0
EQUITY	0	0	0	0	0	0	0	0	0	0
LOAN	0	0	0	0	0	0	0	0	0	0
GOVERNMENT FUND	24825	23626	22426	21227	20028	18828	17627	16429	15230	14031
DEPRECIATION	16793	16793	16793	16793	16793	16793	16793	16793	16793	16793
PROFIT	-17630	-16431	-15231	-14032	-12832	-11633	-10434	-9234	-8035	-6835
TOTAL SOURCE	23988	23988	23988	23988	23988	23988	23988	23988	23988	23988
CONSTRUCTION	0	0	0	0	0	0	0	0	0	0
REINVESTMENT	0	0	0	0	0	0	0	0	0	0
LOAN REPAYMENT	23988	23988	23988	23988	23988	23988	23988	23988	23988	23988
GOV. FUND REPAYMENT	0	0	0	0	0	0	0	0	0	0
TOTAL USE	23988	23988	23988	23988	23988	23988	23988	23988	23988	23988
BALANCE AT END	0	0	0	0	0	0	0	0	0	0
BALANCE OF GOV.FUND	212269	235895	258321	279548	299575	318403	336032	352461	367691	381722

YEAR	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(1) Income Statement												
REVENUE	37792	37792	37792	37792	37792	37792	37792	37792	37792	37792	37792	37792
OPERATION COST	26635	26635	26635	26635	26635	26635	26635	26635	26635	26635	26635	26635
INTEREST	0	0	0	0	0	0	0	0	0	0	0	0
DEPRECIATION	16793	16793	16793	16793	16793	16793	16793	16793	16793	16793	16793	11281
TOTAL EXPENSES	43428	43428	43428	43428	43428	43428	43428	43428	43428	43428	43428	37916
INCOM BEF.081	11157	11157	11157	11157	11157	11157	11157	11157	11157	11157	11157	11157
PROFIT	-5636	-5636	-5636	-5636	-5636	-5636	-5636	-5636	-5636	-5636	-5636	-124
ACCUMULATED PROFIT	-346603	-352240	-357875	-363511	-369147	-374783	-380420	-386055	-391691	-397327	-402963	-403087
(2) Cash Flow												
BALANCE AT BEGINNING	0	0	0	0	0	0	0	0	0	0	0	0
EQUITY	0	0	0	0	0	0	0	0	0	0	0	0
LOAN	0	0	0	0	0	0	0	0	0	0	0	0
GOVERNMENT FUND	0	214466	0	0	0	0	0	0	0	0	0	0
DEPRECIATION	16793	16793	16793	16793	16793	16793	16793	16793	16793	16793	16793	11281
PROFIT	-5636	-5636	-5636	-5636	-5636	-5636	-5636	-5636	-5636	-5636	-5636	-124
TOTAL SOURCE	11157	225623	11157	11157	11157	11157	11157	11157	11157	11157	11157	11157
CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0
REINVESTMENT	0	225623	0	0	0	0	0	0	0	0	0	0
LOAN REPAYMENT	0	0	0	0	0	0	0	0	0	0	0	0
GOV. FUND REPAYMENT	11157	0	11157	11157	11157	11157	11157	11157	11157	11157	11157	11157
TOTAL USE	11157	225623	11157	11157	11157	11157	11157	11157	11157	11157	11157	11157
BALANCE AT END	0	0	0	0	0	0	0	0	0	0	0	0
BALANCE OF GOV.FUND	370585	585030	573873	562716	551559	540402	529245	518088	506931	495774	484617	473460

12. MANAGEMENT OF THE NATIONWIDE IPCS NETWORK SYSTEM

12. MANAGEMENT OF THE NATIONWIDE IPCS NETOWRK SYSTEM

12.1 Issues on Development of Small Scale Fisheries

(1) Issues on development of small scale fisheries

The basic policies on the development of small scale fisheries in the Philippines have been manifested in IFDP formulated by FIDC. The policies include the promotion of specific area integrated projects, development, improvmenet and extension of fishery technology and increase of income from non-fishery sources. The Program also stressed the need for improved marketing through a nationwide construction and operation of infrastructure, provision of equipments and facilities, and quality improvement of products at post-harvest stages.

(2) Strategy proposed by FAO World Fishery Conference

FAO World Conference on Fisheries Management and Development, Rome, June/July 1984, proposed, among others, the following principles and guidelines for the development and management of small-scale fisheries:

a. Since the problems of rural fishing and fish-farming communities are not related solely to fish production, the development of this sector can often be best approached within the context of integrated rural development.

b. As a rule, the interest of the national economy may demand simultaneous and harmonized development of both small-scale and industrial fisheries. There is need for a well-defined overall strategy, based on economic, social, biological and other factors, clarifying the role to be played by each type of fisheries.

c. In planning for the development of small scale fisheries, due consideration should be given to the needs for and provision of shore facilities, adequate marketing and distribution infrastructure, services and financing.

d. The reduction of post-harvest losses through improved handling, processing, transport and distribution systems should be given high priority as it will make an important contribution to the betterment of the small-scale fisheries sector.

e. Education and training and other forms of social investment should be made on the essential parts of small-scale fisheries development. More extension workers should be trained within cooperatives and small scale fishing

communities, in particular in fisheries technology, social welfare and community development and in the management and operation of small-scale enterprises and organizations. The link between extension and practical research should be strengthened.

f. Active participation of small-scale fishing communities in the planning and formulation of develoment activities should be encouraged so as to ensure their successful implementation.

g. The cooperation and participation of fishermen are necessary to ensure the success of small-scale fisheries management schemes. Fishermen's organizations should be considered as a channel through which management decisions can become operative and technical/financial assistance delivered.

h. To ensure the well-being of small-scale fishermen on a sustained basis, it may be necessary in many cases to secure supplementary or alternative sources of income and employment for fishermen so as to reduce pressure on limited fishery resources, possibly by engagement in aquaculture.

As seen in the preceding principles, the success of the Nationwide IPCS Network System will be possible only in the framework of the overall development of the municipal fisheries, and therefore the IPCS project should be integrated with other fishery projects being implemented in the area.

12.2 Current Activities of PFDA

(1) Organization and functions of PFDA

PFDA, formerly known as the Philippine Fish Marketing Authority, was created in August 1976 by virtue of President Decree No. 977. PFDA is a corporate body tasked to carry out the government policy of promoting the development of the fishing industry and improving efficiency in handling, preserving, marketing and distribution of fish and fishery products through the establishment and operation of fish markets, fishing ports/harbors and other marketing facilities. PFDA is also tasked to provide market information, advisory and promotional services to the fishing industry.

Administratively, PFDA has been attached to MNR then transferred to MAF in 1984.

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

Minister of Agriculture and Food	- Chairman
Minister of Natural Resources	- Member
Administrator of National Food Authority	- Member
Minister of Public Works and Highways	- Member
Minister of Trade and Industry	- Member

In addition, two representatives of the private sector are appointed by the president of the Philippines.

The top management of PFDA is vested in the General Manager and Assistant General Manager, who are appointed by and directly responsible to the Board. As of November 1984, PFDA has a total manpower complement of 685 as shown in Table 12.1. The Central office is composed of 3 staff offices and 5 departments as shown in Fig. 12.1. In the field there exist organizational units relating to the Navotas Fishing Port Complex, Municipal Fishing Ports, Ice Plants and Cold Storages, Area Operation Centers and the Northern Palawan Fisheries Development Project.

(2) Brief review of on-going PFDA projects

a. Navotas Fishing Port Complex; NFPC

Constructed by MPWH with ADB funds, NFPC started operations in 1976. PFDA was created primarily to operate and manage NFPC, which was constructed on a land of 67 hectares. The complex had piers, berthing facilities and market halls for commercial fishery. After PFDA took over from MPWH, using local funds PFDA has undertaken the improvement and construction of additional facilities such as a fuel depot, market halls for municipal fishery an ice plant/cold storage and water system. With a total of 244 employees as of 1984 headed by a Port Manager, it has 7 divisions namely: Administrative, Finance, Market Operations, Harbor Operations, Engineering and Maintenance, Ice Plant and Cold Storage, and Police and Security. NFPC is presently the major earner of PFDA with an average annual revenue of 12 million pesos.

b. Northern Palawan Fisheries Development project; NPFDP

This project provided fishing supplies, mechanized bancas, fishing gears, fish landing and marketing facilities to selected small-scale fishermen in Northern Palawan.

It was originally planned that a private management firm should implement the project. However, for the time being PFDA still undertakes major parts of its operations. Thus the management firm is involved only in the selection of fishermen-beneficiaries, and the rest of the project activities is done solely by PFDA. These activities involve the distribution of engines and equipments, sale of ice, purchase/transport/marketing of fishermen's catch and establishment of fishing associations.

c. National Fisheries Development Project; NFDP

NFDP is financed by IBRD and aims at increasing the income of small-scale fishermen in a specific geographic area through the establishment of facilities for the efficient collection, transportation and marketing of fish, and provision of input supplies.

PFDA, together with a private company as partner, had created a subsidiary corporation called SEATI to manage the project. With this management scheme, the project can be operated in a satisfactory commercial manner with a private sector orientation and without undergoing government bureaucracy which hampers most development projects.

Majority of the equity is held by PFDA but the General Manager of SEATI comes from the private company. PFDA has assinged only 6 personnel to the project.

d. Existing ice plants and cold storages

The IPCS Division of the Operations Management Department (OMD) was created to undertake the management of the 35 IPCS which were transferred from BFAR to PFDA. As of November 1984, 10 of these plants are operating of which 8 plants are being managed solely by PFDA, while 2 have been leased to the private sector.

Each plant is run independently with a plant manager supervising the operations. In some cases, the plant engineer also acts as a plant manager. The

work-force of an IPCS is generally composed of a manager, an engineer, a cashier, 2 mechanics and an ice tender. At the PFDA central office, 12 staff including 4 mechanical engineers oversee the operations of all plants.

e. Municipal Fishing Ports; MFP

PFDA, through the Municipal Fishing Ports Division under the Operations Management Department, has started the operation of 3 sites under joint management with the local government. At each site, PFDA provides all maintenance and operating expenses and has assigned 3 personnel to collect market and unloading fees. The municipal government, who has assigned 2 counterpart staff, has a minority share in the profits.

f. Iloilo Fishing Port Complex; IFPC

The construction of IFPC, which was financed by OECF, is almost completed and is expected to be turned over to PFDA in 1985. PFDA has already prepared an operational plan and has acquired funding for the initial operation. An authority to recruit 52 personnel has already been granted to PFDA based on the organizational structure, which is composed of 3 divisions, i.e., Finance and Administrative, Market and Harbor Operations, and IPCS and Engineering.

12.3 Management of IPCS

The IPCS Network System might be fully effective only by being operated in connection with MFP and FTS, and also being suppported by the fishery resources management and fishermen's organizations such as cooperatives.

The management concept of IPCS is summarized as follows based on a limited study which did not cover the MFP/FTS development and activities.

(1) Basic policy

The objective of the IPCS Network System is to meet the requirement for ice and cold storage by the year 2000. It is expected that the system would contribute to an income increase of municipal fishermen and to the economic growth of the fishing communities and the nation.

It is the basic policy in the management of IPCS that PFDA should be the central executive body for the nationwide network. With respect to individual

zones and prototype areas, PFDA should select the management bodies from the private sector including fishermen's organizations and cooperatives, in line with the government policy encouraging the private sector to play a principal role in the development of the fishing industry.

(2) Strategies

In order to ensure the successful management of IPCS, the following strategies should be adopted:

a. to strengthen PFDA as the government executive body

b. to integrate the IPCS network with the related PFDA projects such as "Municipal Fishing Ports" and "Fish Transport System"

c. to establish management systems at respective geographic levels, i.e., local, regional and national

d. to allow PFDA to select management bodies, i.e., existing private firms, fishermen's organizations and other entities involved in the fishing industry

e. to create efficient and practical communication and information systems among the zones as well as in each of them

f. to link the supply of fish from producing areas with the demand for fish in consuming areas

(3) Specific aspects of the management system

a. The executive body

PFDA will be the executve body responsible for the establishment of the system and overall supervision of the mangement of the Nationwide IPCS Network System. As such, it must be given the necessary powers to carry out its responsibilities.

b. The National Center

PFDA is expected to create a National Center for IPCS by expanding its present functions so as to include the followings:

(i) training of IPCS Plant managers and enginers,

(ii) centralization of information and communication on fish and ice distribution, and

(iii) monitoring of financial and operational performances of IPCS in both zones and prototype systems.

c. Management options

Instead or PFDA of its subsidiary corporation, some organizations of the private sector may act as a possible managing body for the IPCS to be established, considering the recent change in the government policy to give the private sector the opportunity to manage and operate business enterprises similar to IPCS.

At all levels, there are 3 options regarding the management of IPCS:

(i) joint management through share-holding,

(ii) lease to the private sector, and

(iii) lease-purchase to the private sector.

Management bodies will be selected by assessing the capability of the candidates and shall be chosen from among the followings (listed according to priority):

(i) fishermen's organizations/cooperatives

(ii) local fishermen or fishing boat owners

(iii) fish or ice wholesalers

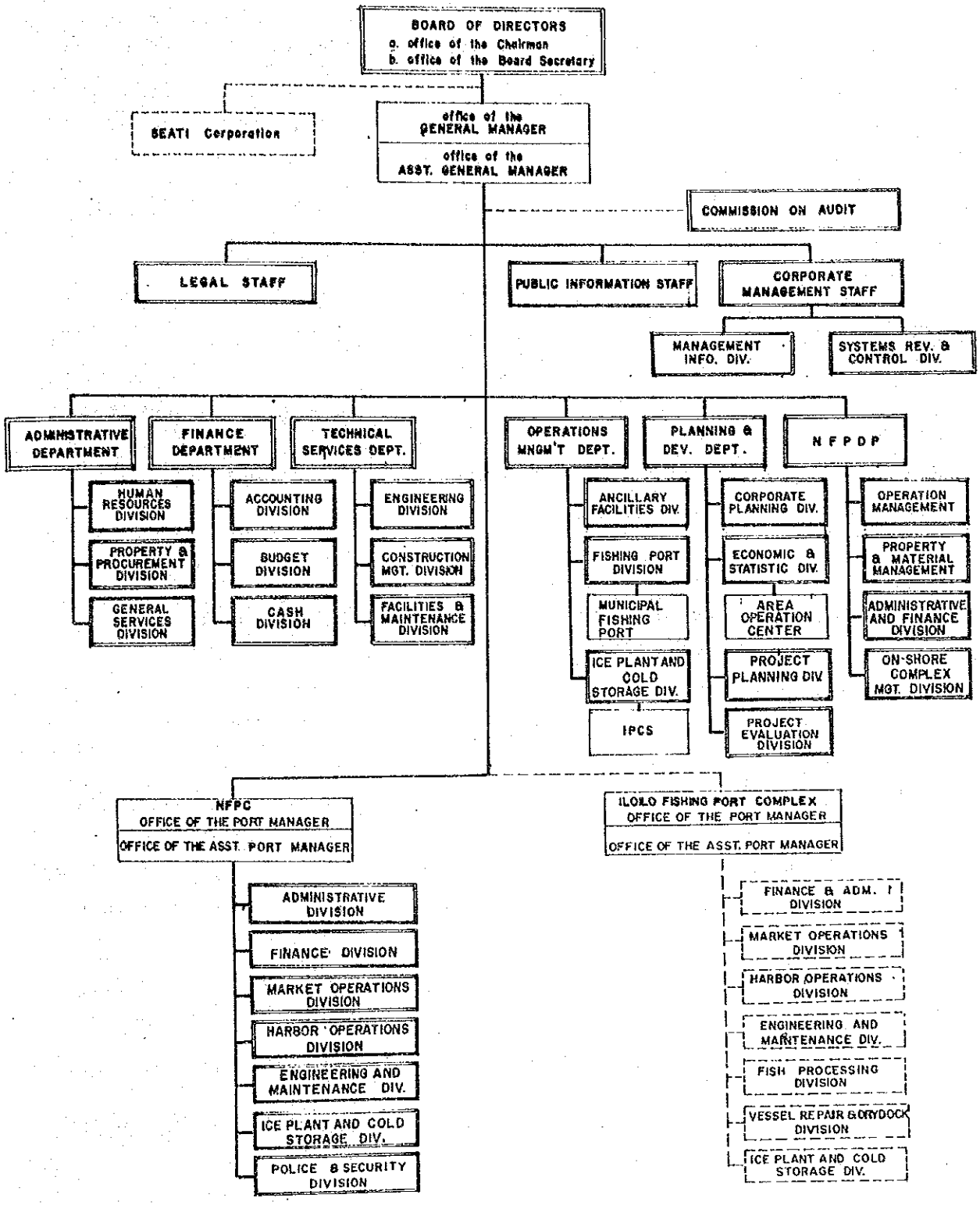
(iv) local ice plant operators

(v) municipal governments

(vi) fish trading firms

In case, there were none of the above being qualified, other entities which are not involved in fishery but interested in and capable of managing IPCS should be vested a chance to becoming a management body of IPCS.

Total numbers of employees are shown in Tables 12.2 to 12.4 by zone center, sub-center and prototype.



SOURCE; " New PFDA Organizational Chart (As approved by the Management Office CY 1983)" PFDA.

Fig. 12.1 OVERALL ORGANIZATION OF PFDA, 1984

REPUBLIC OF THE PHILIPPINES
THE STUDY OF MASTER PLAN FOR THE NATIONWIDE ICE PLANTS AND COLD STORAGES NETWORK SYSTEM
JAPAN INTERNATIONAL COOPERATION AGENCY

Table 12.1 NUMBERS OF EMPLOYEES OF PFDA

Organizational Unit of PFDA	Permanent	Casual	Total
1. Central Office	193	54	247
2. NFPC	150	94	244
3. APC (8 Centers)	16	16	32
4. NPFDP	61	39	100
5. IPCS	49	9	58
6. MEP	4	-	4
Sub-total	473	212	685
Contractual	-	-	-
Total	473	212	685

Remarks: Numbers of Staff as of Nov. 1984.

Source : Provided from PFDA, Nov., 1984.

Table 12.2 NUMBERS OF EMPLOYEES REQUIRED FOR ZONE CENTER BY ZONE IN 2000

	Zone											
Employee	1	2	3	4	5	6	7	8	9	10	11	Total
Manager	1	1	1	1	(1)	(1)	1	1	1	1	1	9(11)
Casher	1	1	1	1	(1)	(1)	1	1	1	1	1	9(11)
Mechanical Eng.	1	1	1	1	(1)	(1)	1	1	1	1	1	9(11)
Mechanic	2	2	2	2	(2)	(2)	2	2	2	2	2	18(22)
Operator	0	0	0	0	3	3	0	0	0	0	0	6
Brineman/Labor	6	5	7	6	5	8	8	7	8	5	6	71
Driver	3	1	2	1	1	1	4	1	2	1	3	20
Total	14	11	14	12	9	12	17	13	15	11	14	142(152)

Remarks: ( ) shows the number of employees for the existing BFAR IPCS.

Table 12.3 NUMBERS OF EMPLOYEES REQUIRED FOR SUB-CENTER BY ZONE IN 2000

Employees	Zone											
	1	2	3	4	5	6	7	8	9	10	11	Total
(No. of Sub-center)	(4)	(4)	(5)	(1)	(6)	(1)	(5)	(3)	(2)	(2)	(3)	(36)
One of Employees by one Sub-center												
Manager/Cashier	1	1	1	1	1	1	1	1	1	1	1	-
Operator	0	0	0	0	0	0	0	0	1	0	0	-
Laborer	1	1	1	1	1	1	1	1	1	1	1	-
Total	2	2	2	2	2	2	2	2	3	2	2	-
Grand Total	8	8	10	2	12	2	10	6	6	4	6	74

Table 12.4 NUMBERS OF EMPLOYEES BY PROTOTYPE IN 2000

Employees	Ice Plant Capacity (t/d)						
	1	3	5	10	15	1*	Total
(No. of Prototype)	(19)	(6)	(3)	(6)	(14)	(1)	(49)
One of Employees by one Prototype							
Manager/Cashier	1	1	1	1	1	0	-
Mechanical Eng.	0	0	0	0	0	0	-
Mechanic	1	1	1	3	3	1	-
Operator	0	0	1	0	0	0	-
Brineman/Laborer	1	1	1	4	4	1	-
Driver	0	0	0	0	0		
Total	3	3	4	8	8	2	-
Grand Total	57	18	12	48	112	2	249

Remarks: *; Mobile ice plant.

13. IMPLEMENTATION PROGRAM

13. IMPLEMENTATION PROGRAM

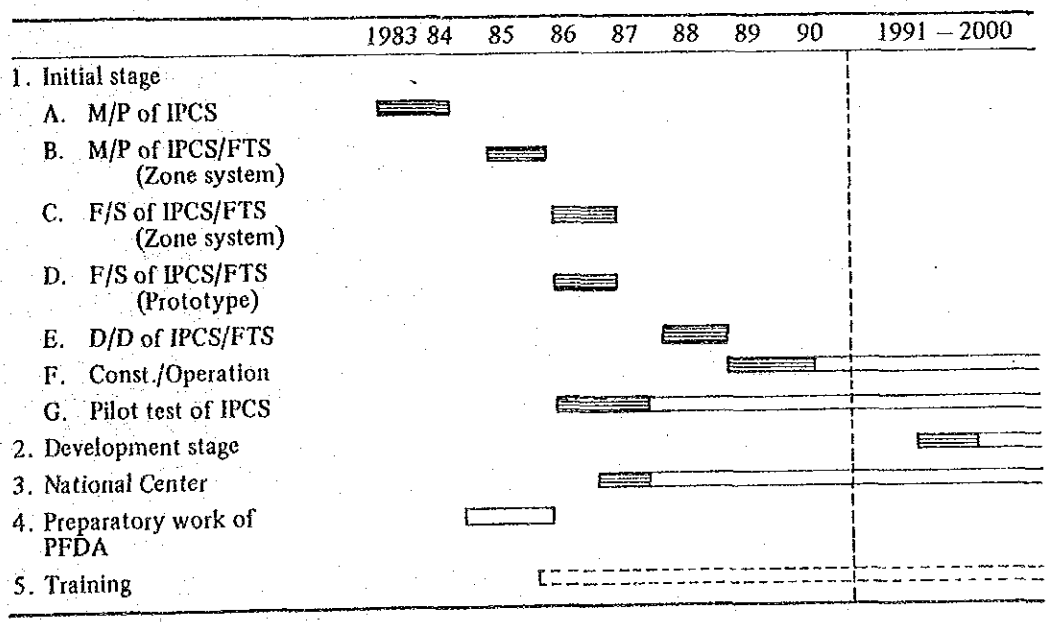
The master plan for the system was completed by the end of March 1985. The Study has covered only ice plants and cold storages and did not include FTS, as stipulated in the I/A on the technical cooperation agreed between JICA and MNR/PFDA in September 1983.

The IPCS System should be operated as an integrated scheme together with MFP and FTS for the benefit of municipal fishermen.

The Study Team recommends tentatively the following schedule for consideration by the Government of the Philippines.

The preparation of an expanded master plan which also covers FTS and other relevant projects should be started immediately after the present study. It is also recommended that feasibility studies be commenced upon the completion of the expanded master plan. The initial stage of construction including pilot test plants should be completed by 1990, while the development stage of construction should be the period from 1990 to 2000. Pilot tests should be conducted to ascertain reliable and practical methods of management for the zone and prototype systems.

The National Center should be reorganized by 1990 and operated as a part of PFDA and be responsible for controlling and monitoring the Nationwide IPCS Network System.



Remarks: Preparatory work of PFDA includes organizing, financing and training of personnel.
▭: Before operation (study and construction)
▭: Operation
M/P: Master Plan, F/S: Feasibility Study, D/D: Detail Design

14. CONCLUSIONS AND RECOMMENDATIONS

14. CONCLUSIONS AND RECOMMENDATIONS

The Study was conducted to formulate the Master Plan of the Nationwide IPCS Network System closely related to MFP. The Study covered the 101 sites proposed in the PFDA preliminary study.

The Study Team assessed the existing ice plants and cold storage in the Philippines to draw up the basic principles for the formulation of the Master Plan.

The sites proposed by PFDA were grouped and integrated into several zones to establish the most profitable system. At the same time, it was recommended to build prototype plants at the priority sites excluded from the above-mentioned zone system.

The zone system will be composed of a zone center and sub-centers. The zone center functions as an ice making and distribution center for the zone, while the sub-centers will be located at or near the municipal fishing ports or other fish landing sites and supply ice directly to fishermen.

11 zones and 52 prototype sites were selected and plant capacities of their IPCS were determined based upon the projected supply of and demand for ice for the target years, 1990 and 2000.

Most of the ice plants should be completed by 1990 in the zones and all the prototype sites. During the period from 1990 to 2000, additional investment for ice plans will be required for some zones and cold storages will be built in the specific zones.

The total construction cost was estimated at a constant price as of June 1984, to be 1.03 billion pesos, of which the foreign currency portion would account for 89% and the local currency portion would be 11%. The construction of the zone system would cost 0.64 billion pesos and that of the prototype system would cost 0.39 billion pesos.

The Nationwide IPCS Network System was considered justifiable from the economic point of view, bringing the benefit of reducing fish spoilage. The zone system might be sound from the financial point of view as well as the economic point of view. The prototype system may meet difficulties because of low benefits and revenues in relation to the construction cost. However, if IPCS is managed jointly together with the relevant projects such as MFP and FTS, the financial position of the whole IPCS project might be improved.

PFDA is expected to be the central executive body to monitor opeational and financial conditions of the Nationwide IPCS Network System and individual bodies of IPCS.

Instead of PFDA or its subsidiary corporation, some organizations of private sector which may act as a possible managing body for IPCS should be established, considering the recent change in the government policy to give the private setor the opportunity to manage and operate business enterprises similar to IPCS.

Regarding the management of IPCS, following 3 options are considerable.

(i) joint management through share-holding

(ii) lease to the private sector

(iii) lease-purchase to private sector

In any of the options, participation of fishermen concerned is expected to be highly encouraged for the management of IPCS.

PFDA may consider the establishment of a National Center for IPCS by expanding its functions so as to include the following elements:

(i) training of IPCS plant managers and engineers,

(ii) centralization of information and communication of fish and ice distribution, and

(iii) monitoring of financial and operational performances of IPCS in both zone and prototype systems.

It is recommended that, following the present study, measures as listed below be taken up by the Government of the Philippines.

a. According to I/A, the present study has been concentrated on the establishment of the IPCS system alone. However, the system is to be expanded and to be integrated with MFP, FTS and any other relevant projects. For these reasons, it is recommended that, following the present study, preparation of an expanded master plan in which all the above projects are incorporated should be started immediately after the present study.

b. To accelerate the implementation of the project, it is recommended that feasibility studies be conducted in areas where necessity of IPCS is most urgently felt by the Government, simultaneously with the preparation of the expanded master plan.

c. Pilot test plants should be established in one representative zone and in a few existing or priority prototype sites to develop the management system of the project.

d. Training should be started before the plants become operational to meet the need for plant managers, engineers and other personnel. Such training must be undertaken regularly and periodically.

e. In relation to IPCS/FTS projects, studies should be made on:

(i) development of fish handling systems to improve the quality of fish at various stages, e.g., fishing, marketing and distribution

(ii) development of the cold storage system in consumption centers

(iii) development of the transportation system from fish production centers to consumption areas

(iv) use of IPCS for the sectors other than fisheries to raise their efficiency

f. Major fields of overseas training

Training aborad of appropriate personnel is recommended for the following fields:

(i) Fishery resources management

(ii) Management of fisheries infrastructure preferably by fisheries cooperatives

(iii) Refrigeration engineering

(iv) Plant operation and maintenance

(v) Fish handling, processing and quality control

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ANNEX 1 – IMPLEMENTING ARRANGEMENT

ANNEX 2 – LIST OF PERSONS INVOLVED

ANNEX 1 – IMPLEMENTATION ARRANGEMENT

IMPLEMENTING ARRANGEMENT ON TECHNICAL COOPERATION BETWEEN JAPAN INTERNATIONAL COOPERATION AGENCY AND MINISTRY OF NATURAL RESOURCES FOR THE STUDY OF THE MASTER PLAN FOR THE NATIONWIDE ICE PLANTS AND COLD STORAGES NETWORK SYSTEM IN THE REPUBLIC OF THE PHILIPPINES

Agreed upon by:

JAPAN INTERNATIONAL COOPERATION AGENCY

AND

MINISTRY OF NATURAL RESOURCES

September 1, 1983
at Quezon City, Philippines

Prof. & Dr. Tadashi Yamamoto
Leader of the Implementing
Arrangement Team, Japan
International Cooperation Agency

Hon. Teodoro Q. Peña
Minister of Natural Resources
Republic of the Philippines

In the Presence of:

Asst. Min. Antonio Y. Capay
Ministry of Natural Resources
Republic of the Philippines

Att. Malcolm I. Sarmiento, Jr.
Assistant General Manager for
Atty. Benito Q. Bengzon
General Manager, Philippine
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Philippines

I. INTRODUCTION

In response to the request of the Government of the Republic of the Philippines (hereinafter referred to as GOP), the Government of Japan (hereinafter referred to as GOJ) has decided to conduct a study of a master plan for the nationwide ice plants and cold storages network system (hereinafter referred to as the Study of IPCS), and exchanged the Notes Verbales with GOP concerning the implementation of the Study.

The Japan International Cooperation Agency (hereinafter referred to as JICA), the official agency responsible for the implementation of technical cooperation programs of GOJ, will undertake the Study, in accordance with the relevant laws and regulations in force in Japan.

On the part of GOP, the Ministry of Natural Resources, through the Philippine Fisheries Development Authority (hereinafter referred to as MNR-PFDA) shall act as the counterpart agency to the Japanese study team (hereinafter referred to as The Study Team), and also the coordinating body in relation with other governmental and non-governmental organization concerned for the smooth implementation of the Study.

This document constitutes the implementing arrangements between JICA and MNR-PFDA under the above-mentioned Notes Verbales exchanged between the two governments.

II. IMPLEMENTATION OF THE STUDY

The Study shall be implemented in accordance with the Scope of Work attached herewith (See Appendix I).

III. UNDERTAKING OF GOP

In accordance with the Notes Verbales exchanged between GOJ and GOP, GOP shall accord privileges, immunities and other benefits to the Study Team and shall take necessary measures to facilitate smooth implementation of the study through the authorities concerned.

1. The MNR-PFDA shall be responsible for dealing with claims which may be brought about by third parties against the members of the Study Team and shall hold them harmless in respect to claims or liabilities arising in the course of or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims or liabilities arise from the gross negligence or willful misconduct of the above-mentioned members.

2. The MNR-PFDA, at its own expense, in cooperation with other agencies concerned, shall provide the Study Team with the following:

   (1) Available data and information needed for the Study.

   (2) Project officer and assistant project officer on full time basis for the whole period of the Study.

   (3) Counterpart personnel in the following field whenever their participation is required.

      a. Fishery resources
      b. Fishery-economics
      c. Fish marketing
      d. Fishery institutions
      e. Ice Plant and Cold Storage
      f. Civil engineering

   (4) Suitable office space with necessary equipment.

   (5) Credentials or identification cards for the members of the Study Team.

   (6) One (1) service vehicle with driver.

3. The MNR-PFDA shall make necessary arrangements with the governmental and non-governmental organizations concerned for the following:

   (1) To secure the safety of the Study Team

   (2) To exempt the members of the Study Team from taxes, duties, fees and other charges on equipment, machinery and other materials brought into the Philippines necessary for the conduct of the Study.

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(3) To exempt the members of the Study Team from income tax and charges or any kind imposed on or in connection with the allowances remitted from abroad.

(4) To secure permission for entry into private properties or restricted areas for the conduct of the Study.

(5) To provide medical facilities as needed, however, any expense will be chargeable to the members of the Study Team.

(6) To arrange the hiring of additional personnel as needed, however, wages will be chargeable to JICA funds.

(7) To secure permission to take all data and documents related to the Study out of the Philippines to Japan by the Study Team.

(8) To arrange accomodations required during field work however its expenses will be chargeable to the members of the Study Team.

4. MNR-PFDA shall undertake, in close collaboration with the Study Team, the collection of data and information necessary for the assessment of the existing IPCS in the vicinity of the 100 proposed sites.

IV. UNDERTAKING OF GOJ

In accordance with the Notes Verbales exchanged between GOJ and GOP, GOJ shall take necessary measures through JICA for the implementation of the Study.

(1) To dispatch, at its own expense, the Study Team to the Republic of the Philippines to carry out all activities specified in the scope of work (See Appendix 1).

(2) To pursue technology transfer to the Philippine counterpart personnel in the course of the Study.

APPENDIX I

SCOPE OF WORK FOR THE STUDY OF THE MASTER PLAN FOR THE NATIONWIDE ICE PLANTS AND COLD STORAGES NETWORK SYSTEM

I. Objective of the Study

The objective of the study is to formulate the master plan for the nationwide IPCS network system, which may be completed during the period 1985 to 2000, for the purpose of contributing to the effective utilization of fishery products in the Philippines.

II. Scope of the Study

The study shall be conducted in two phases:

1. Phase I - Preparation of Preliminary Master Plan

1.1 Review of the PFDA Preliminary Study of IPCS

1.2 Collection and collation of data needed for the Study

1.3 Field Survey I

To be acquainted with overall situation of major areas/sites and to collect additional data and information lacking in 1.1 and 1.2 above.

1.4 Assessment of the existing IPCS system in terms of:

- ice supply-demand analysis
- types of ice products being produced
- pricing system/structure
- availability of water and power
- rated (official) and operating capacities

1.5 Formulation of a preliminary master plan

A preliminary master plan for the nationwide IPCS network system will be prepared based on the results of the above-mentioned studies taking into account the following factors for each region or appropriate area.

(1) Future demand and supply projection for ice and cold storage requirement in each proposed site

(2) Implementation schedule of municipal fishing port development program

(3) Accessibility to the market for ice

(4) Availability of raw materials (water, electricity, etc.)

(5) Economic and financial viability

2. Phase II - Finalization of Master Plan

2.1 Field Survey II

To ascertain the appropriateness of the preliminary master plan as studied in 1.5 above, a further field survey will be made.

2.2 Formulation of the Master Plan

The master plan of the nationwide IPCS network system will be prepared with respect to the following four (4) items taking into consideration economic, financial, and technical factors as listed under 1.5 above.

(1) Establishment of several prototypes of IPCS suited to the different conditions, specifying capacities, type of ice, ice transportation means, etc.

(2) Determination of the priority for each of the proposed IPCS site, depending on urgency of need.

(3) Formulation of the final master plan, based on the study results in (1) and (2) above.

(4) Recommendation for the effective operation of the nationwide IPCS network system.

III. Study Schedule

The Study will be executed in accordance with the schedule as indicated in Appendix II.

IV. Reports

The following reports shall be submitted during the study period.

(1) Inception Report (10 copies): Within one (1) month after the commencement of the Study

(2) Interim Report (20 copies): Within one (1) month after the end of the phase I study

(3) Draft Final Report (20 copies): Within two (2) months after the end of the Phase II study

(4) Final Report (50 copies): Within two (2) months after receiving the comments of MNR on Draft Final Report.

Appendix II

Tentative Schedule

Work Item \ Year / Month	1983 Aug	Sep	Oct	Nov	Dec	1984 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	1985 Jan	Feb	Mar
(Philippine side) Works relating to the inventory list				■	■	■														
(Japan side) 1. Phase I																				
Assembly of data, Assessment of the existing IPCS, Review of the Preliminary Study of IPCS and Field Survey I				■	■	■	■													
Formulation of a preliminary master plan							▨	▨												
2. Phase II																				
Field survey II and Formulation of a master plan											■	■	■	■						
3. Reports					△				△	↑						△		↑		△
					Inception report				Interim report		Comment					Draft final report			Comment	Final report

Legend: ■ in the Philippines
▨ in Japan

In concluding the Implementing Arrangement for the study of the master plan for the Nationwide Ice Plants and Cold Storages Network System in the Republic of the Philippines, the JICA Implementing Arrangement Team (JICA Team) and the MNR-PFDA exchanged their views on the following points:

1. Office Space for the Study Team

   The MNR-PFDA agreed to provide at least desks, chairs and filing cabinets, and also to make every possible effort to provide a telephone set.

2. Technology Transfer

   As far as the Study of IPCS is concerned, the meaning of "technological transfer" as stated in (2) of IV of the Implementing Arrangement is understood by MNR-PFDA and the JICA team as follows:

   To effect transfer of technical knowledge by permitting active participation of local counterpart staff and making available to them relevant information and techniques pertaining to the study.

3. To further implement the transfer of technical knowledge as stated above, the MNR-PFDA earnestly proposed to allow at least two (2) PFDA representatives to participate in the master planning work in Japan. In this regard, the JICA Team assured that the proposal will be conveyed to Japanese authorities concerned for consideration.

September 1, 1983
at Quezon City, Philippines

Prof. & Dr. Tadashi Yamamoto
Leader of the Implementing
Arrangement Team, Japan
International Cooperation
Agency

Hon. Teodoro Q. Peña
Minister of Natural Resources
Republic of the Philippines

In the Presence of:

Asst. Min. Antonio Y. Capay
Ministry of Natural Resources
Republic of the Philippines

Atty. Malcolm I. Sarmiento, Jr.
Assistant General Manager for
Atty. Benito Q. Bengzon
General Manager, Philippine Fisheries
Development Authority
Philippines

IMPLEMENTING ARRANGEMENT ON TECHNICAL COOPERATION BETWEEN JAPAN INTERNATIONAL COOPERATION AGENCY AND MINISTRY OF NATURAL RESOURCES FOR THE STUDY OF THE MASTER PLAN FOR THE NATIONWIDE ICE PLANTS AND COLD STORAGES NETWORK SYSTEM IN THE REPUBLIC OF THE PHILIPPINES

Negotiating Panel

JICA TEAM

Prof. & Dr. Tadashi Yamamoto	-	Head
Mr. Aritune Furukawa	-	Member
Mr. Kenichi Hamada	-	Member
Mr. Kunihiro Shinoda	-	Member

PHILIPPINE TEAM

Atty. Malcolm I. Sarmiento, Jr.	-	Asst. General Manager PFDA
Mr. Facundo R. Yeneza, Jr.	-	Manager, Planning and Development Department PFDA
Mr. Leonides T. Samaniego	-	Representative, Ministry of Natural Resources
Ms. Victoria Taasan	-	Representative, National Economic and Development Authority
Mr. Nelson M. Davila	-	Chief, Physical Planning Division, PFDA
Ms. Grace G. Santibañez	-	Chief, Corporate Planning Division, PFDA
Mr. Antonio Dagdagan	-	OIC, Institutional Services Department, PFDA
Mr. Rodrigo Bulaon	-	Chief, Engineering and Maintenance Division, Navotas Fishing Port Complex, PFDA
Ms. Linda J. Po	-	Commercial Development Officer, IPCS Task Force, PFDA

ANNEX 2. LIST OF PERSONS INVOLVED

Name	Speciaity	Office & Title
1. Japanese Side		
1.1 Advisory Committee		
(1) Dr. Tadashi Yamamoto (Chairman)		Professor, College of Economics, Nihon University
(2) Mr. Tohru Morikawa		Exec. Director, Japan Marine Products Importers Association
(3) Mr. Aritsune Furukawa		Div. of Statistics, Ministry of Agriculture Forestry and Fisheries
(4) Mr. Junichi Hasegawa		Overseas Economic Cooperation Fund
1.2 Study Team		
(1) Mr. Tateo Kusano	Team Leader	System Science Consultants Inc., Ltd.
(2) Dr. Tamotsu Tomiyama	Fisheries Export	– do –
(3) Mr. Toshifumi Maruta	Market and Transport Planner	– do –
(4) Mr. Masanori Doi	– do –	– do –
(5) Mr. Teruo Yabana	Plant Engineer – Design	– do –
(6) Mr. Soichi Takai	Plant Engineer – Management	– do –
(7) Mr. Kyoichi Sugiyama	Architect & Civil Engineer	– do –
(8) Mr. Nobuo Tsuchihashi	Institutional Expert	– do –
(9) Mr. Takashi Inoue	Project Economist	– do –
(10) Mr. Tetsuhiko Hirawasa	Port Planner	– do –
(11) Mr. Koichi Fukurono	Civil Engineer	– do –
2. Philippine Side		
2.1 Advisory Committee		
Phase I		
(1) Mr. Antonio Y. Capay (Chairman)		Asst. Minister, MNR
(2) Atty. Malcom I. Sarmiento, Jr.		Asst. General Manager, PFDA
(3) Mr. Felix R. Gonzales		Director, BFAR, MNR
(4) Ms. Elizabeth D. Samson		Exec. Director, FIDC
Phase II		
(1) Atty. Aurora B. Marcos (Chairman)		Asst. Secretary, MAF
(2) Atty. Malcom I. Sarmiento, Jr.		Asst. General Manager, PFDA
(3) Mr. Felix R. Gonzales		Director, BFAR, MAF
(4) Mr. Jesus Alix		Director, BAECON, MAF
(5) Mr. Manuel de Leon		Asst. Director, Agriculture Staff, NEDA
2.2 Coordinator		
Mr. Facundo R. Yeneza, Jr.		Manager, Planning & Development Dept., PFDA
2.3 Counterparts		
(1) Mr. Nelson M. Davila (Leader)		PFDA
(2) Mr. Linda J. Po (Asst. Leader)		PFDA
(3) Mr. Josue D. Agustin		PFDA
(4) Mr. Constante T. Pascua		PFDA
(5) Mr. Teodoro C. Catalla		PFDA
(6) Mr. Rustico R. Castro		PFDA
(7) Ms. Nancy Lynn Estoesta		PFDA
(8) Ms. Ma. Lisa B. Cruz		PFDA
(9) Ms. Nanette Kampitan		FIDC