

APPENDIX 5. COST ESTIMATION BORNE BY THE RECIPIENT COUNTRY

5-1 Costs of leveling and land preparation shall be borne by the Federated States of Micronesia

Total costs to be borne by the Federated States of Micronesia.			US \$ 8,500
a) Leveling of the Project site in West Harbor and removal of benches and a hut made of nipa palm.			US \$ 2,500
Bulldozer	US \$ 60 × 7 - 8 hrs. x 5 days	US \$ 2,200	
Workers	US \$ 30 × 2 × 5 days	US \$ 300	
b) Leveling of the Project site in Falalop Island, Ulithi Atoll and removal of old building remains.			US \$ 6,000
For leveling	US \$ 30 × 10 x 10 days	US \$ 3,000	
For removing	US \$ 30 × 10 × 10 days	US \$ 3,000	

5-2 Financial and operation plan of support stations

The balance, income and expenditure for each site

Name of site	Income	Expenditure	Balance
A. West Harbor (Annual Balance)	36,957 US.\$	34,657 US.\$	2,300 US.\$
B. YFA (Annual Balance for the part of projected new ice machines)	67,200 US.\$	20,321 US.\$	46,879 US.\$
C. Falalop Island (Annual Balance)	14,700 US.\$	23,129 US.\$	-8,429 US.\$
Total (Consolidated account)	118,857 US.\$	78,107 US.\$	40,750 US.\$

Details of expenditure

Expenditure (Annual)	West harbor	For New ice machines in YFA	Falalop Island
1a Cost of electricity for ice machines	8,073 US.\$	18,837 US.\$	3,123 US.\$
2a Cost of water supply	36 US.\$	84 US.\$	6 US.\$
3a Cost of electricity for cooling unit fitted to ice storages	798 US\$	Included in the item 1a	-
3a Maintenance fee for the ice machines	600 US.\$	1,400 US.\$	2,000 US.\$
4a Wege for manager	10,000 US.\$	-	10,000 US.\$
5a Wage for accountant or refrigeration engineer	7,000 US.\$	-	7,000 US.\$
6a Wage for driver	5,000 US.\$	-	-
7a Office expenses	1,000 US.\$	-	1,000 US.\$
8a Operation cost of vehicle	2,150 US.\$	-	-
Sub total of expenditure	34,657 US.\$	20,321 US.\$	23,129 US.\$
Sum total			78,107 US \$

Details of income (per year)

Income (Annual)	West harbor	For New ice machines in YFA	Falalop Island
1b Sales of ice	28,800 US.\$	67,200 US.\$	12,000 US.\$
2b Income from Rental box	4,200 US.\$	-	2,700 US.\$
3b Income from transportation service	1,500 US.\$	-	-
4b Income from fuel oil supply service	2,457 US.\$	-	-
Sub total of income	36,957 US.\$	67,200 US.\$	14,700 US.\$
Sum of income			118,857 US \$

The costs used in calculation are as follows.

- The cost of electricity for ice machines, water charges, maintenance fees, profits from ice sales were divided along the lines of the ratio 1.2 tons/2.8 tons for West harbor and Yap Fishing Authority in Colonia respectively.
- Current rates were applied for the power charges of 19 cents per Kw-hour plus basic charge of US 10 \$ per month on Yap Proper and 13 cents per Kw-hour plus basic charge of US 10 \$ per month on Falalop Island.
- The price of ice was made the same as the current value of 8 cents per Kg.

The details of operation costs are as follows.

1a Conditions

Items	New ice machines in YFA	Ice machines in Falalop Island
Ice production capacity	4 tons (2 tons × 2 sets) per 24 hours	0.5 ton (0.5 ton × 2 sets) per 12 hours
Operation time per day	24 hours	12 hours
Cost of electricity	0.19 Kw/Hr.	0.13 Kw/Hr.
Operation ratio	100%	100%

A-1a Cost of electricity for new ice machines in YFA, Colonia, Yap proper

Name of equipment	Nos.	Electric consumption in kw	Load rate	Total power consumption in kw
Compressor	2	11.00 kw	0.75	16.50 kw
Raw water pump	2	0.40 kw	0.75	0.60 kw
Crusher	2	1.50 kw	0.10	0.30 kw
Feeding pump	2	0.40 kw	0.75	0.60 kw
Air cooled condenser	2	0.20 kw	0.75	0.30 kw
Screw conveyer	1	1.50 kw	0.10	0.15 kw

Name of equipment	Nos.	Electric consumption in kw	Load rate	Total power consumption in kw
Unit coolers fitted to ice storage	1	1.50 kw	0.75	1.13 kw
Power consumption per hour				19.58 kw
Power consumption per day			24	470 kw
Power consumption per month			25	11,750 kw
Consumption of Electricity per year			12	141,000 kw
Cost of Electricity (Consumption rate)			0.19	26,790 US.\$
Base charge		12	10	120 US.\$
Cost of Electricity in total (Annual)				26,910 US.\$
Operation rate and Power cost			100%	26,910 US.\$

A-3a Cost of electricity for unit cooler fitted to ice storage in West harbor, Gatmoon, Yap proper

Item	Nos.	Electric consumption in kw	Load rate	Total power consumption in kw
Unit coolers fitted to the ice storage	2	0.40 kw	0.75	0.60 kw
Electric consumption per day			24	14 kw
Electric consumption per month			25	350 kw
Electric consumption per year			12	4,200 Kw
Cost of electricity per year			0.19	798 US.\$

C-1a Cost of electricity for ice making machines in Falalop Island, Ulithi Atoll

Item	Nos.	Electric consumption in kw	Load rate	Total power consumption in kw
Compressor	2	3.70 Kw	0.75	5.55 Kw
Raw water pump	2	0.20 Kw	0.75	0.30 Kw
Crusher	2	0.75 Kw	0.10	0.15 Kw
Feeding pump	2	0.20 Kw	0.75	0.30 Kw
Air cooled condenser	2	0.10 Kw	0.75	0.15 Kw
Power consumption per hour				6.45 Kw
Power consumption per day			12	77 Kw
Power consumption per month			25	1,925 Kw
Consumption of Electricity per year			12	23,100 Kw
Cost of Electricity (Consumption rate)			0.13	3,003 US.\$
Base charge		12	10	120 US.\$
Cost of Electricity in total (Annual)				3,123 US.\$
Operation rate and Power cost			100%	3,123 US.\$

8a Operation cost of vehicle

Running distance per day	10 Km per trip	6 tripss	60 Km
Running distance per month		25 days	1,500 Km
Running distance per year		12months	18,000 Km
Fuel oil consumption per kilometer		5 Km per Lt.	3,600 Lts.
Consumed fuel oil in galons		3.785 Lt per Gal.	951 Gal.
Cost of fuel oil		US \$ 1.10 per Gal.	1,046 US.\$
Cost of lubrication oil and grease		10% of the above	105 US.\$
Maintenance fee per year			1,000 US.\$
Annual operation cost of vehicles			2,151 US.\$

2b Income from rental box

Number of boxes and ratio of lending	24 boxes	60%	14 boxes
Rental fee (US \$ 1 per one box per day)			14 US.\$ per day
Income per month		25	350 US.\$
Income per year		12	4,200 US.\$

3b Income from transportation service

Transportaion service (carrying together) per month	25 days	US \$ 5 per one service (carrying together)	125 US.\$
Annual income		12 months	1,500 US.\$

4b Income from fuel oil supply service

Amount of fuel oil supply per day	For 12.6 boats per day	6.5 galons per boat	82 galon in total
Amount of fuel oil supply per month		25days	2,048 Gal.
Handling charge of fuel oil supply per month		0.1 US \$ per galon	205 US\$
Annual income		12 months	2,457 US\$

APPENDIX 6. DATA

a) Basic data

Statistical yearbook, 1995 in Yap state

Annual catch	1,595,600 Kgs. in 1994 (Estimation)
Population, the Yap state	11,178 (1994 census)
Fish consumption per person per year	143 Kgs.

b) Number of crafts in the Yap state

Department of Resources and Development, and OFCF

Year	Number of craft	Population in Yap Proper
Crafts including rafts in 1986	1,021	6,650
Boats with outboard engines in 1995	233	6,929

c) Number of boats and distribution

Department of Resources and Development, and OFCF

Division in Yap proper	Coast where fishing	Number of crafts including rafts in 1986	Number of boats with outboard engines in 1995
Runung	West and East coasts	36	30
Map	West and East coasts	122	25
Gagil	East coast	129	25
Tomil	South coast	59	28
Fanif	West coast	86	15
Weloy	West and South coasts	128	20
Dalipebinau	West coast	29	10
Ruil	South coast	402	45
Kanifay	West coast	19	15
Gilman	West and South coasts	11	20
Total		1,021	233

d) Population and density in 1994

Preliminary counts of Census in 1994

States and outer Island	Land area in sq. miles	Land area in sq. kilometer	Population in 1994	Density per sq. kilometer
Phonpei State	132.18	342.35	33,372	97
Kosrae State	43.19	111.86	7,354	66
Chuuk State	49.28	127.64	52,870	414
Yap State	45.93	118.96	11,128	94
Ulithi Atoll	1.80	4.67	1,006	215
FSM	271	701	104,724	149

e) Exports and imports in US \$, FSM, 1989 - 1993

Trade bulletin No.7 (1994)

Item	1989	1990	1991	1992	1993
Exports (reported)	1,860,064	3,224,784	9,743,479	23,319,264	29,168,908
Exports (not available of sales data)	5,052,055	5,632,020	6,117,280	5,984,340	4,982,490
Philatelic sales	116,725	149,732	56,861	47,983	36,193
Fishing rights fees	10,251,755	12,659,962	12,841,213	12,144,470	15,083,868
Exports in total	17,280,599	21,666,498	28,758,833	41,496,057	49,271,459
Imports in total	72,724,789	83,880,020	88,630,630	98,796,385	109,486,243
Balance	-55,444,190	-62,213,522	-59,871,797	-57,300,328	-60,214,784

f) Weight of fishing industry for exports earnings, in US \$

Trade bulletin No.7 (1994)

	1989	1990	1991	1992	1993
Fishing rights fees	10,251,755	12,659,962	12,841,213	12,144,470	15,083,868
Exports in total	17,280,599	21,666,498	28,758,833	41,496,057	49,271,459
Fishing rights fees by Total exports earnings	59.33%	58.43%	44.65%	29.27%	30.61%
Exports of Marine product	544,016	2,591,943	9,158,972	20,110,281	25,320,342
Exports of Marine product by Total exports earnings	3.15%	11.96%	31.85%	48.46%	51.39%
Fishing rights fees plus Exports of Marine product	10,795,771	15,251,905	22,000,185	32,254,751	40,404,210
Weight of fishing industry by exports earnings	62.47%	70.39%	76.50%	77.73%	82.00%

g) Exports of marine products by state, in US \$

Trade bulletin No.7 (1994)

	1989	1990	1991	1992	1993
Chuuk State	440,016	329,004	844,440	1,652,482	10,007,077
Kosrae State	0	32,313	3,472	0	2,250
Phonpei State	0	1,805,626	7,976,750	9,246,836	9,438,912
Yap State	104,000	425,000	334,310	9,210,963	5,872,103
Total exports	544,016	2,591,943	9,158,972	20,110,281	25,320,342
Weight of exports of Yap State	19.12%	16.40%	3.65%	45.80%	23.19%

h) Exports and Imports, in US \$, Yap state

Trade bulletin No.7 (1994)

Item	1989	1990	1991	1992	1993
Exports (reported)	223,000	502,000	451,981	11,373,192	8,259,721
Exports (no sales data)	780,200	778,560	937,800	991,400	1,268,750
Exports in total	1,003,200	1,280,560	1,389,781	12,364,592	9,528,471
Imports in total	9,094,463	12,113,927	11,133,026	18,079,890	21,183,803
Balance	-8,091,263	-10,833,367	-9,743,245	-5,715,298	-11,655,332

i) Imported food, in US \$, Yap state

Trade bulletin No.7 (1994)

Imported foods	1989	1990	1991	1992	1993
Canned meat	2,430,80	2,108,377	847,424	1,866,329	2,279,651 US\$
Canned fish	1,603,284	1,304,304	1,232,662	1,616,949	5,468,017 US\$
Frozen meat	2,095,311	1,874,635	2,186,676	2,110,916	2,104,292 US\$
Poultry	1,418,126	1,588,547	1,324,957	1,299,207	1,526,345 US\$
Eggs	44,210	70,204	194,585	144,306	176,178 US\$

Cost of imported canned fish is an amount of US \$ 5,468,017. Total amount of imported canned fish is estimated around 2,734,000 pounds equal to 1,241 tons assuming that the price of canned fish is settled US \$ 2 and contents is one pound per can.

j) Mean expenditure on food per person per week by state

Second National Development Plan

Name of state	local production foods	Imported foods	Total
Chuuk State	0.58 US\$	5.78 US\$	6.36 US\$
Kosrae State	2.84 US\$	5.25 US\$	8.10 US\$
Phonpei State	2.07 US\$	5.63 US\$	7.70 US\$
Yap State	0.95 US\$	6.40 US\$	7.36 US\$
FSM	1.25 US\$	5.79 US\$	7.04 US\$

k) Imported foods by state, in US \$,

Trade bulletin No.7 (1994)

Name of imported food / state	FSM	Chuuk state	Kosrae state	Pohnpei state	Yap state
Canned meat	2,279,651 US\$ 100.00%	1,017,418 44.63%	182,241 7.99%	699,218 30.67%	380,774 16.70%
Frozen meat	2,104,292 US\$ 100.00%	817,139 38.83%	99,499 4.73%	999,852 47.51%	187,802 8.92%
Poultry	1,526,345 US\$ 100.00%	473,046 30.99%	457,225 29.96%	459,789 30.12%	136,285 8.93%
Eggs	176,178 US\$ 100.00%	48,989 27.81%	36,237 20.57%	57,429 32.60%	33,523 19.03%

l) Consumption of canned fish by state, in US \$, in weight

Trade bulletin No.7 (1994)

Item / state	FSM	Chuuk state	Kosrae state	Pohnpei state	Yap state
Canned fish	5,468,017 US\$ 100.00%	4,721,450 86.35%	71,821 1.3%	459,305 8.40%	215,441 3.94%
Estimated canned fish in Kg	1,241,240 Kgs.	1,071,769	16,303	104,262	48,905
Population in '94	104,724	52,870	7,354	33,372	11,128
Consumption of canned fish in Kgs. per person per year	11.85 Kgs	20.27	2.22	3.12	4.39

Cost of imported canned fish is an amount of US \$ 5,468,017. Total amount of imported canned fish is estimated around 2,734,000 pounds equal to 1,241 tons assuming that the price of canned fish is settled US \$ 2 and contents is one pound per can.

m) Development bank approvals by sectors

Second National Development Plan (1990)

Agriculture	43	641,500 US\$
Fisheries	9	79,125 US\$
Manufacturing	3	510,202 US\$
Real estate	1	22,500 US\$
Commercial	9	401,053 US\$
Tourism	8	2,311,500 US\$
Total	73	3,965,880 US\$

n) Income per person from all sources by state, per week

Second National Development Plan

State	Mean	25 %	75 %
Chuuk State	10.25 US\$	1.78 US\$	12.91 US\$
Kosrae State	20.73 US\$	5.56 US\$	25.40 US\$
Phonpei State	16.14 US\$	1.18 US\$	20.82 US\$
Yap State	34.53 US\$	3.75 US\$	35.01 US\$
FSM	16.36 US\$	2.50 US\$	21.94 US\$

o) Income per household from all sources Dollar per week

Second National Development Plan

Location	Mean	25%	75%
Main Islands	125.98 US\$	37.18 US\$	183.84 US\$
Outer Islands	32.51 US\$	0 US\$	46.18 US\$

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