

ANNEX M

FINANCIAL ANALYSIS

ANNEX-M

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M.1 APPROACH TO FINANCIAL ANALYSIS

M.1.1 Objectives

Financial analysis has been made to verify the financial viability of the Project in terms of financial internal rate of return (FIRR) and to assess the feasibility of alternative financing plan for the Project in a simplified form.

M.1.2 Method of Analysis

1) Financial viability of the Project

Financial viability is evaluated from the investor's point of view. One of the methods employed for the evaluation is cost-benefit analysis. Cost is incurred to the investor in implementing the project, while benefit refers to the revenue gained from the project implementation. Financial viability can be proved when the FIRR derived in the analysis exceeds the investor's opportunity cost of capital (OCC).

For the Esmeraldas EPZ, the implementing organization is ZOFREE, a mixed company established by both public and private capital. Cost of the Project comprises initial investment in infrastructures and facilities, promotion cost, and operation and maintenance (O&M) cost. ZOFREE is exempted from tax on its revenue under the Law of Free zones. Benefit is its revenue gained from the rent of land, standard factories and floors of buildings, and other charges. Attention has been paid to the cost allocation between ZOFREE and other organizations, because some components of infrastructure and facilities can be constructed and operated by the organizations other than ZOFREE.

ZOFREE's opportunity cost of capital is difficult to be determined due to its nature of mixed company and due to the fact that it is a new establishment only for the Project. Thus, cut-off rates of financial institutions in the project appraisal are adopted for the evaluation of financial viability of the Project. The cut-off rates used in major financial institutions in Ecuador are as follows:

<u>Financial Institutions</u>	<u>Cut-off Rates in real terms</u>
• National Finance Corporation (CFN)	12 %
• Inter-American Development Bank (IDB)	12 %
• Andean Development Corporation (CAF)	12.5%

Thus, the cut-off rates of 12~12.5% can be taken as the surrogate of the ZOFREE's opportunity cost of capital. For this Study, 12% is adopted as OCC.

2) Assessment of alternative financing plans

The financing plan for the Project is examined, when it is proved that the Project is financially viable. First, possible finance sources are presumed for foreign and local portion of the initial investments. Then, a cash flow is prepared in a simplified form for each combination of finance sources.

In the preparation of cash flow for the Esmeraldas EPZ, following three cases have been assumed as financial arrangement:

- Case 1 - Concessional loan,
- Case 2 - Government grant, and
- Case 3 - Commercial loan.

M.2 BENEFIT-COST ANALYSIS

M.2.1 Cost

The cost of the Project is estimated in detail in ANNEX L. Table M-1 presents the disbursement schedules of the Project cost in US dollar at June 1991 price level. The "internal cost" in the table refers to the cost that ZOFREE should lay out at minimum. The rest of the Project cost includes the cost for access roads to fishing port, water-supply, power-supply exclusive of the building of sub-station, telecommunication and gas station (Refer to Table M-2). The cost of power-supply and telecommunication is not enumerated in the total cost, since the users in the EPZ and other agencies or institutions concerned will take care of it.

The internal cost is estimated to be US\$ 5.61 million for initial investment including promotion cost, and US\$ 206,000 for O&M cost in full operation stage (1996 and thereafter). By adding the external cost, the total investment will amount to US\$6.14 million and the O&M cost will be US\$215,000 (Refer to Table M-2).

M.2.2 Revenue

The revenues will derive from the land lease, standard factory rental, floor rental for commercial services and charges on sewerage and solid waste disposal.

1) Unit prices

Unit price of each revenue is determined in principle by taking into account cost recovery, self-financing principle and sustainability of the Project. It is critical, however, to consider price competitiveness in the market. This consideration is especially important for the Project, because there are many existing and on-going EPZs in neighboring countries. The Esmeraldas EPZ is a "late-comer" into the market.

Thus, in setting unit price, primary attention is paid to keeping price competitiveness as compared to the price prevailing in other EPZs in the region. The aspect of cost recovery can be checked afterwards through the financial analysis of the Project, specifically by means of FIRR.

The unit prices of land lot, standard factory building, warehouse, etc. in other EPZs in neighboring countries are summarized as shown in the following table:

Country	EPZ	Rental Cost (\$/m ² /month)				Remarks
		SFB (Floor)	Lot (Land)	W.H. (Floor)	Office B (Floor)	
1. Colombia						
	Barranquilla	0.38~0.84	0.26	-	-	
	Cartagena	2.5	0.3 /1 ~1.5 /2	1% of CIF value	-	Warehouse: 1,400m ² (floor) x 9 ridges
2. Costa Rica		2.25~2.66	-	-	6.1	
3. Rep. Dominica		2.64~3.0	1.67~	-	5.4	SFB: 1,300m ² (floor) x 10 units
4. Mexico		3.7~4.3	1.12~1.31	0.25/100 lb	-	

Remarks : /1: Open air lot; /2: Roofed lot

Sources : "Study of Industrial Free Zone in the Andean Countries and in Costa Rica, Mexico and Dominican Republic", The Andean Development Corporation, Oct. 1989"

"Tax-Free Trade Zones of the World", Walter H. Diamond and Dorothy B. Diamond, Jan. 1991

By referring to the unit prices in other EPZs, the prices of facilities in the Esmeraldas EPZ are presumed as shown below.

Revenue Source	Unit Price
• Land lease	US\$0.3~0.5/m ² /month
• Standard factory rental	US\$2.5/m ² /month
• Floor rental for commercial services	US\$5.0/m ² /month

Additionally, the charges on sewerage and solid waste disposal will be assumed to be equivalent to their O&M cost.

2) Lease and rental schedule

Lease and rental schedule is projected in Annex L, Table L - 1. Firms are scheduled to be located in the Esmeraldas EPZ from 1994 and filled up in 1996. The occupancy rates are summarized as follows:

Item	Year	1994	1995	1996	Total	Area (ha)
	• Lot area		13%	38%	49%	100%
• Floor area of standard factory		8%	19%	73%	100%	38,300 m ²
• Floor area of commercial services		0	0	100%	100%	630 m ²

3) Revenue buildup

Table M-3 shows the revenue build-up of the Project, based on the unit prices and lease and rental schedule as noted above. Unit price of land lease is provisionally set at US\$0.5/m².

Annual revenue is forecasted to increase from US\$0.20 million in 1994 to US\$0.57 million in 1995 and US\$1.35 million in full occupation in 1996. In full occupation, land lease accounts for 51% of total revenue, followed by standard factory rental (41%).

M.2.3 Financial Internal Rate of Return

1) FIRR

FIRR of the Project is calculated on the basis of the annual flow of costs and revenues as estimated above. The evaluation period of the Project is set to be 20 years, which corresponds to the length of period valid for the provision of land from the Port Authority.

As mentioned in Chapter M.1.2, the cut-off rate of FIRR is 12~12.5% in real terms. Therefore, FIRR has to be calculated in real terms. It is difficult, however, to forecast the price escalation of goods and services one by one. Therefore, value in constant prices is employed in the calculation, which means that prices of all the goods and services concerned are assumed to rise in the same rate.

Tables M-4 and M-5 present the financial benefit and cost streams, exclusive and inclusive of the external cost, respectively. With only the internal cost, FIRR is calculated to be 15.4%. When external cost is added to the internal cost, FIRR will turn out to be 13.5%. In conclusion, the Project is financially viable since FIRRs exceed the cut-off rate of 12 - 12.5%.

2) Sensitivity analysis

Sensitivity to FIRR is analysed, by changing the revenues and costs as follows:

Revenue

It is considered that changes in revenue are most likely to take place due to changes in unit price of land lease, because its competitive price has been evaluated to be between US\$0.3/m² and US\$0.5/m². Thus, the cases are set as follows:

- Case 1 : Unit price of land lease US\$0.4/m²
- Case 2 : Unit price of land lease US\$0.3/m²
- Case 3 : Delay in revenue by one year
- Case 4 : Increase in revenue by 10%

Cost

- Case A : Increase in cost by 10%
- Case B : Increase in cost by 15%
- Case C : Increase in cost by 20%
- Case D : Decrease in cost by 10%

The result of sensitivity analysis is summarized below.

Benefit	Cost	(Internal Cost)				(%)
		Base case	Case A (+10%)	Case B (+15%)	Case C (+20%)	Case D (-10%)
Base case	(\$0.5/m ²)	15.4	13.4	12.5	11.7	17.5
Case 1	(\$0.4/m ²)	13.0	11.1	10.3	9.6	15.0
Case 2	(\$0.3/m ²)	10.5	8.8	8.0	7.2	12.5
Case 3	(1 year delay)	12.4	10.8	10.1	9.4	14.2
Case 4	(10% increase)	17.3	15.3	14.4	13.6	19.6

Benefit	Cost	(Internal and External Cost)				(%)
		Base case	Case A	Case B	Case C	Case D
Base case		13.5	11.7	10.8	10.0	15.6
Case 1		11.7	10.0	9.2	8.4	13.7
Case 2		9.3	7.7	6.9	6.2	11.2
Case 3		11.0	9.4	8.7	8.5	12.7
Case 4		15.4	13.5	12.6	11.8	17.6

Analysis is first made on the case that only internal cost is taken into account. Given the cost constant, financial viability of the Project would be maintained even if the unit price of land lease is declined from US\$0.5/m² to US\$0.4/m², but no longer to US\$0.3/m². Financial viability is sensitive to the delay in revenue by one year, maintaining the same annual occupancy rates. Given the revenue constant, on the other hand, increase in costs by 15% would not threaten the financial viability of the Project, but no longer increase in cost by 20%.

When ZOFREE bears the internal and external costs, the financial viability is more vulnerable to negative changes in cost and benefit. Both the decline in unit prices of land lease

and the delay in revenue would make the Project financially unfeasible.

Consequently, as far as the above results are concerned, it is recommended that ZOFREE lay out only the internal cost, and that ZOFREE make utmost endeavour not to cause delay in attracting investors and in obtaining resultant revenue from the investors.

M.3 ASSESSMENT OF ALTERNATIVE FINANCING PLANS

M.3.1 Possible Finance Arrangements

Through interviews with major finance institutions in Ecuador such as National Finance Corporation (CFN), Development Bank of Ecuador (BEDE), Central Bank of Ecuador, Inter-American Development Bank (IDB) and Andean Development Corporation (CAF), basic conditions of financing have been verified as follows:

- (1) It is difficult for the international development finance institutions to directly finance to ZOFREE due to their policies and uncertainty of ZOFREE's creditability
- (2) External loans can be channeled through CFN on condition that only a foreign portion of project costs is eligible for the loan. The loan through CFN is provided in local currency with its terms of loan.
- (3) CFN has a fund for working capital, S/. 400 million at maximum at the moment, but may increase this limitation in near future as it has a plan to expand its own fund.
- (4) BEDE's lending has been confined to public sector development projects and non-profit institutions. There is, however, an exemption when CONADE and Procuraduria General del Estado permit BEDE to provide loans to private entities when social or public purposes of the project is recognized.

Tables M-6 and M-7 provide further information on CFN and BEDE loans, respectively. It is noted that the lending interest rate of CFN is the same as that of commercial banks, though other terms of loan are different. The lending interest rate of BEDE is preferential. With the above conditions in view, alternative finance arrangements have been assumed as follows:

Alternative 1 (Concessional loan for local portion excluding promotion cost)

Foreign Portion : CFN
Local Portion : BEDE

Alternative 2 (Government grant for local portion or total portion of infrastructure)

Foreign Portion : CFN
Local Portion : Government grant (+ Commercial loan)

Alternative 3 (Commercial loan for local portion)

Foreign Portion : CFN
Local Portion : Commercial loan

M.3.2 Alternative Financing Plans

1) General

Alternative financing plans are examined on the basis of aforementioned revenue, cost and financial arrangements. As the lending interests of loan are nominal, the financing plans have to be prepared at current prices. Monetary value is displayed in local currency since all the loans will be provided in Sucre.

It is difficult to forecast changes in inflation rates, so that following assumptions have been made in view of the current conditions:

- Inflation rate in Ecuador : 50% per annum
- Depreciation of Sucre against US dollar : 45.5% per annum
- Lending interest rates and other charges : 56% (CFN and commercial banks)
48% (BEDE)

For the depreciation of Sucre against US dollar, the rate of depreciation was projected, using the Manufacturing Unit Value (MUV) index between 1991 to 2005, forecasted by World Bank (Table M-8). MUV represents the average import price faced by developing countries. In Table M-8, the forecast of depreciation is made on the basis of purchasing power parity principle: the exchange rate will adjust to maintain parity, or "difference", in the purchasing power of local and foreign currencies, when the rate of inflation in Ecuador is different from the rate among the country's major trading partners.

Recent change in the exchange rate in Ecuador apparently follows the principle by its "crawling-peg" policy.

2) Net income

Revenues and costs of ZOFREE has been projected in a simplified manner. Revenues are just converted into Sucre from US dollar, with the depreciation rate of 45.5% per annum.

Costs usually comprise operating costs including maintenance and promotion costs, interests, depreciation and tax. For the Project, however, income tax is exempted under the Law of Free Zone. Likewise, depreciation can be ignored since it does not affect net income

and it is counterbalanced afterwards in accounting principles. The costs are inflated in each year at the inflation rate of 56%. Payment of interest rates varies, depending on alternative financial arrangements. Table M-9 presents operating costs (O&M costs and promotion cost). Accordingly, net income of the Project is derived, in a simplified way, from the following formula:

$$NI = R - (Co + Ci)$$

where

- NI : Net income
- R : Gross revenue
- Co : Operating costs
- Ci : Payment of interests

3) Sources and uses of funds

(1) Sources of funds

Sources of funds can consist of the net income, depreciation, equity, Government contribution and loans. Out of the components, depreciation is ignored for the reason mentioned before.

Equity

As of June 1991, ZOFREE has its paid-up capital of S/. 5 million, which is scheduled to increase up to S/. 208 million within the year. Port Authority is a major stockholder (75%), followed by private enterprises (20%) and public institutions (5%).

As described in Table M-7, ZOFREE can increase its equity by CFN's participation in stockholders if the requirements in the table are met. Suppose CFN holds stocks at maximum, the equity will amount to S/. 516 million for the current amount of ZOFREE's equity. ZOFREE gives a priority in the application of equity to working capital.

Government Contribution

As mentioned before, the Government is expected to contribute to ZOFREE a fund, at least, for the local portion of infrastructure. The contribution amounts to US\$950,000 or S/. 1,093 million at June 1991 prices (exchange rate: 1 US\$ = S/. 1,150). This will be taken into account in the alternative financing plan (Alternative 2).

Loans

Finance sources are assumed as noted in Chapter M.3.1. Foreign portion of the promotion and O&M costs up to 1995 is assumed to be included in the loan provided by CFN, while foreign portion of the promotion cost in the loan is presumably provided by other local finance institutions.

Even with the loans and other funds, it is anticipated that there will be annual deficits in cash flow for several years after the commencement of implementation of the Project. Therefore, CFN's fund for working capital is assumed to meet the deficits. Terms of the loan is presented in Table M-6.

(2) Uses of funds

The funds will be applied to project investment and loan repayment. In this analysis, outlay of dividends is not taken into account. The project investment comprises the initial investment of the Project. Table M-9 shows the disbursement schedule of the Project investment.

4) Alternative financing plans

(1) Alternative 1

Case 1

Alternative 1 is a financial arrangement of concessional loan for the local portion of the Project. Foreign portion of the Project cost is assumed to be provided by CFN, while local portion by BEDE. In addition, CFN's fund for working capital is assumed to be given so as to meet the annual deficits.

Table M-10 presents simplified income and cash forecasts in the case of Alternative 1. No increase in equity in real terms is assumed. Table M-11 through M-14 are detailed explanation and breakdown of Table M-10. Table M-11 shows a projection of increase in equity by obtaining interests, which includes two cases: with and without CFN's participation in stockholders. Table M-12 through Table M-14 indicate the disbursement and repayment schedule of each loan.

As shown in Table M-10, net income would be surplus in 1997, the fourth year from the commencement of the Project operation. In the cash flow, however, annual surplus would be realized in 2004, the eleventh year from the commencement of operation.

Case 2

Difference between Cases 1 and 2 is on the equity. Here, S/. 765 million is assumed to be added to the scheduled equity of S/. 208 million with participation of CFN and others in the stockholders in 1992.

As shown in Table M-15, annual surplus is expected to be raised in 2003; the tenth year of operation, and one year earlier than the Case 1. In addition, the amount of loan required for the working capital would be reduced to 60% of the Case 1, at current prices.

(2) Alternative 2

Case 1

In Case 1 of Alternative 2, it is assumed that the Government will provide a fund for the local portion of infrastructure, while commercial loan will be provided for the rest of the local portion. Loan for the foreign portion, as well as working capital, is again assumed to be financed by CFN.

Table M-16 presents the simplified income and cash flow forecasts of Alternative 2: Case 1. In the cash flow, annual balance would become surplus in 2002, two years earlier than the case of Alternative 1: Case 1. Tables M-17 and M-18 show the loan and repayment schedules of commercial loan and CFN fund for working capital, respectively.

Case 2

In Case 2, the government is assumed to outlay for both the foreign and local portion of infrastructure costs, while the other conditions are the same as in the Case 1 of Alternative 2.

Annual surplus would be raised in 1999, three years earlier than the Case 1 of Alternative 2 (Table M-19).

(3) Alternative 3

Alternative 3 is a financial arrangement of commercial loan for the local portion of the Project. Terms of commercial loan are set as follows:

Interest rate	:	56%
Grace period	:	No grace period
Repayment period	:	One year
Method of payment	:	Equal amount of principal

Other loans are the same in conditions as in the other Alternatives.

Table M-23 indicates that annual surplus would not be raised by 2010.

(4) Comparison of alternatives

The table below shows a summary of the cash flow by each alternative financing plan analysed above.

Alternatives	Year shifting for surplus		Loan requirement (Current S/. mill)
	Net income	Total balance	
1 (Case 1)	1997 (4)	2004 (11)	627,427
1 (Case 2)	1997 (4)	2003 (10)	387,419
2 (Case 1)	1996 (3)	2002 (9)	174,506
2 (Case 2)	1996 (3)	1999 (6)	75,743
3	-	-	-

Remarks: () indicates the year from the operation commencement.
Years for net income are overestimated more or less because depreciation is not taken into account in this analysis.

Among the alternatives, Alternative 2, especially Case 2, is the best option and it is hoped that the Government would provide the fund for the infrastructure cost for ZOFREE.

There is another way to get the Project financially sound. As shown in Alternative 1, Cases 1 and 2, increase in equity will reduce the loan requirement and get the surplus raised earlier in cash flow.

The result of Alternative 3 indicates that it would be difficult to implement the Project if ZOFREE fully depends on commercial banks as the sole finance source, and there is no increase in equity.

In conclusion, recommendations on the financing plan are made in the following manners:

- To seek for the Government contribution to the Project,
- To increase equity as much as possible, for example, by asking for CFN's participation in the stockholders,
- To request that ZOFREE can obtain CFN's fund for working capital as much as possible, beyond the current limitation of S/. 400 million, and
- To ask BEDE and appropriate agencies to permit ZOFREE to obtain BEDE's loan.

An indicative flow for finance arrangement of the Project is illustrated in Figure M-1. With respect to the equity, for increase, particular attention will be paid to CFN's participation in stockholders. As noted in Table M-6, CFN's share of stocks should not be more than 50%. Therefore, it is better for ZOFREE to increase its equity as much as possible before CFN's participation in stockholders.

Priority in finance arrangement for initial investment is given to the government contribution. In the event that the government contribution is not realizable, concessional loans (BEDE, CFN) should be searched for in the realization of the Project.

Table M - 1 DISBURSEMENT SCHEDULE OF PROJECT COST (FINANCIAL COST) (1/2)

INTERNAL COST	(US\$ 1000 in June, 1991 Prices)														
	1992			1993			1994			1995			TOTAL		
	F.C.	L.C.	Total	F.C.	L.C.	Total	F.C.	L.C.	Total	F.C.	L.C.	Total	F.C.	L.C.	Total
I. CONSTRUCTION COST															
1. Land Leveling	0	132	132	0	0	0	0	0	0	0	0	0	0	0	0
2. Infrastructure															
1) Road (Main / Submain Road)	0	0	0	0	91	91	0	0	0	0	0	0	0	0	0
2) Drainage	0	109	109	0	217	217	0	0	0	0	0	0	0	0	0
3) Water Supply	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4) Sewerage	343	88	431	686	177	863	0	0	0	0	0	0	0	0	0
5) Solid Waste Disposal	0	0	0	0	217	217	0	0	0	0	0	0	0	0	0
6) Electric Facility	0	0	0	0	50	50	0	0	0	0	0	0	0	0	0
7) Telecommunication	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total	343	197	540	686	753	1,438	0	0	0	0	0	0	0	0	0
3. Standard Factory	0	0	0	20	143	163	46	332	378	176	1,273	1,449	242	1,749	1,990
4. Administrative Facility	0	0	0	9	86	95	0	0	0	0	0	0	9	86	95
5. Service Facility (Exclu. Gas Station)	0	0	0	0	0	0	0	0	0	9	90	99	9	90	99
6. Park, Sports park	0	0	0	0	0	0	0	0	0	0	58	58	0	58	58
7. Others (Gate, Fence, Bus Terminal)	0	0	0	0	47	47	0	0	0	0	0	0	0	47	47
Total	343	329	672	714	1,029	1,743	46	332	378	185	1,421	1,606	1,288	3,112	4,400
II. DESIGN & SUPERVISION COST	27	26	54	57	82	139	4	27	30	15	114	128	103	249	352
III. PROMOTION COST	32	22	55	65	45	110	65	45	110	65	45	110	227	157	384
IV. PHYSICAL CONTINGENCY	37	36	73	77	111	188	5	36	41	20	154	173	139	336	475
V. TOTAL	440	413	853	913	1,267	2,181	119	440	559	284	1,733	2,018	1,757	3,854	5,611
O & M COST															
I. REMUNERATION															
1. Main Staff	0	17	17	0	42	42	0	53	53	0	64	64	0	67	67
2. Others (Guard, Driver etc.)	0	0	0	0	0	0	0	10	10	0	19	19	0	19	19
Sub-total	0	17	17	0	42	42	0	62	62	0	83	83	0	86	86
II. DIRECT COST OF O & M															
1. Infrastructure	0	0	0	0	0	0	0	75	75	0	75	75	0	75	75
2. Standard Factory	0	0	0	0	0	0	3	3	3	1	10	11	5	35	40
3. Administrative facility	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
4. Service Building	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5. Others	0	0	0	0	0	0	0	0	0	0	1	1	0	2	2
Sub-total	0	0	0	0	0	0	1	80	81	1	87	88	5	115	120
III. TOTAL	0	17	17	0	42	42	1	143	143	1	170	171	5	201	206

Table M - 1 DISBURSEMENT SCHEDULE OF PROJECT COST (FINANCIAL COST) (2/2)

Cost Items	(US\$ 1000 in June, 1991 Prices)														
	1992			1993			1994			1995			Total		
	F.C.	L.C.	Total	F.C.	L.C.	Total	F.C.	L.C.	Total	F.C.	L.C.	Total	F.C.	L.C.	Total
INTERNAL AND EXTERNAL COST															
I. CONSTRUCTION COST															
1. Land Leveling	0	132	132	0	0	0	0	0	0	0	0	0	0	0	132
2. Infrastructure	0	0	0	0	107	107	0	0	0	0	0	0	0	0	107
1) Road	0	109	109	0	217	217	0	0	0	0	0	0	0	0	326
2) Drainage	51	85	136	101	171	272	0	0	0	0	0	0	152	256	408
3) Water Supply	343	88	431	686	177	863	0	0	0	0	0	0	1,029	265	1,294
4) Sewerage	0	0	0	0	217	217	0	0	0	0	0	0	0	217	217
5) Solid Waste Disposal	0	0	0	0	50	50	0	0	0	0	0	0	0	50	50
6) Electric Facility	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7) Telecommunication	394	282	676	787	939	1,726	0	0	0	0	0	0	1,181	1,222	2,402
Sub-total	0	0	0	20	143	163	46	332	378	176	1,273	1,449	242	1,749	1,990
3. Standard Factory	0	0	0	9	86	95	0	0	0	0	0	0	9	86	95
4. Administrative Facility	0	0	0	0	0	0	0	0	0	11	107	117	11	107	117
5. Service Facility	0	0	0	0	0	0	0	0	0	0	58	58	0	58	58
6. Park, Sports park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7. Others (Gate, Fence, Bus Terminal)	0	0	0	0	47	47	0	0	0	0	0	0	0	47	47
TOTAL	394	414	808	815	1,215	2,031	46	332	378	186	1,438	1,624	1,441	3,400	4,841
II. DESIGN & SUPERVISION COST															
III. PROMOTION COST															
IV. PHYSICAL CONTINGENCY															
V. TOTAL															
	500	515	1,015	1,094	1,489	2,522	119	440	559	286	1,753	2,039	1,939	4,196	6,135
O & M COST															
I. REMUNERATION															
1. Main Staff	0	17	17	0	20	20	0	42	42	0	53	53	0	64	64
2. Others (Guard, Driver etc.)	0	0	0	0	0	0	0	10	10	0	19	19	0	19	19
Sub-total	0	17	17	0	20	20	0	42	42	0	62	62	0	83	86
II. DIRECT COST OF O & M															
1. Infrastructure				3	81	84	3	81	84	3	81	84	3	81	84
2. Standard Factory				0	3	3	1	10	11	1	10	11	5	35	40
3. Administrative facility				0	1	1	0	1	1	0	1	1	0	1	1
4. Service Building				0	0	0	0	0	0	0	0	0	0	0	0
5. Others				0	1	1	0	1	1	0	1	1	0	2	2
Sub-total				4	86	89	4	86	89	4	92	97	8	121	129
III. TOTAL															
	0	17	17	0	20	20	4	148	152	4	175	180	8	207	215

Table M-2 RESPONSIBLE AGENCIES OF FACILITY

Item	Construction		Maintenance/Operation	
	ZOFREE	Other agency	ZOFREE	Other agency
1. Land readjustment	O	-	-	-
2. Road				
• Roads in EEPZ (Main, Sub, others)	O	-	O	-
• Access road to fishing port	-	O (Port Authority)	-	O (Port Authority)
3. Water supply facility (conduit pipe, distribution tank, pipe)	-	O (IEOS)	-	O (Municipality)
4. Sewerage (Sewage treatment plant, sewer)	O	-	O	-
5. Drainage	O	-	O	-
6. Solid waste disposal	O	-	O	-
7. Electric facility (Substation, electric line)	/1	O (EMELESA)	-	O (EMELESA)
8. Telecommunication facility	-	O (IETEL)	-	O (IETEL)
9. Standard factory (10 factories)	O	-	O	-
10. Administrative facility				
• ZOFREE office, etc.	O	-	O	-
• Fire station	O	-	-	O
• Post office	O	-	-	O
11. Service facility				
• Bank, restaurant, etc.	O	-	O	-
• Clinic, etc.	O	-	-	O
• Gasoline station	-	O	-	O
• Bus terminal	O	-	O	-
12. Others (park, sports facility, fence)	O	-	O	-

Remarks: /1 ZOFREE will construct the building of substation.

Table M - 3 ZOFREE'S REVENUE BUILDUP

Item	1994	1995	1996 - 2010
A. OWN BUILT FACTORY			
1. Lot Area (ha)			
First Located Firms	1.47	1.47	1.47
Second Located Firms		4.42	4.42
Third Located Firms			5.66
Total	1.47	5.89	11.55
2. Revenue at constant terms			
First Located Firms			
Unit Revenue (US\$/m2/month)	0.5	0.5	0.5
Unit Revenue (US\$/ha/year)	60,000	60,000	60,000
Annual Revenue (US\$/year)	88,200	88,200	88,200
Second Located Firms			
Unit Revenue (US\$/m2/month)		0.5	0.5
Unit Revenue (US\$/ha/year)		60,000	60,000
Annual Revenue (US\$/year)		265,200	265,200
Third Located Firms			
Unit Revenue (US\$/m2/month)			0.5
Unit Revenue (US\$/ha/year)			60,000
Annual Revenue (US\$/year)			339,600
Total Revenue (US\$/year)	88,200	353,400	693,000
B. PRE-BUILT FACTORY			
1. Floor Area			
First Located Firms	0.15	0.15	0.15
Second Located Firms		0.35	0.35
Third Located Firms			1.33
Total	0.15	0.5	1.83
2. Revenue at Constant Terms			
First Located Firms (ha)			
Unit Revenue (US\$/m2/month)	2.5	2.5	2.5
Unit Revenue (US\$/ha/year)	300,000	300,000	300,000
Annual Revenue (US\$/year)	45,000	45,000	45,000
Second Located Firms			
Unit Revenue (US\$/m2/month)		2.5	2.5
Unit Revenue (US\$/ha/year)		300,000	300,000
Annual Revenue (US\$/year)		105,000	105,000
Third Located Firms			
Unit Revenue (US\$/m2/month)			2.5
Unit Revenue (US\$/ha/year)			300,000
Annual Revenue (US\$/year)			399,000
Total	45,000	150,000	549,000
C. USERS OF OFFICE BUILDING*			
1. Area (m2)			630
2. Revenue at constant terms			
Unit Revenue (US\$/m2/month)			5
Unit Revenue (US\$/m2/year)			60
Annual Revenue (US\$/year)			37,800
D. CHARGE ON SEWERAGE & WASTE DISPOSAL			
Annual Revenue (US\$/year)	66,950	66,950	66,950
TOTAL	200,150	570,350	1,346,750

Note: * Including lunch service, kiosk, restaurant, clinic, tenant and gas station.

**Table M - 4 FINANCIAL BENEFIT AND COST STREAM
(INTERNAL COST)**

(US\$ 1000 at 1991 June prices)

Year	COST			BENEFIT**	NET BENEFIT (B - C)
	Initial Cost	OMR* Cost	Total		
1991	0	17	17	0	-17
1992	853	20	873	0	-873
1993	2,181	42	2,222	0	-2,222
1994	559	143	702	200	-502
1995	2,018	171	2,189	570	-1,619
1996	0	206	206	1,347	1,141
1997	0	206	206	1,347	1,141
1998	0	206	206	1,347	1,141
1999	0	206	206	1,347	1,141
2000	0	206	206	1,347	1,141
2001	0	206	206	1,347	1,141
2002	0	206	206	1,347	1,141
2003	0	206	206	1,347	1,141
2004	0	206	206	1,347	1,141
2005	0	206	206	1,347	1,141
2006	0	360	360	1,347	987
2007	0	206	206	1,347	1,141
2008	0	206	206	1,347	1,141
2009	0	206	206	1,347	1,141
2010	0	206	206	1,347	1,141
				FIRR =	15.4 %

* O & M cost and Replacement cost

** Unit Price of Lot = US\$ 0.5/m²

**Table M - 5 FINANCIAL BENEFIT AND COST STREAM
(INTERNAL AND EXTERNAL COST)**

(US\$ 1000 at 1991 June prices)

Year	COST			BENEFIT**	NET BENEFIT (B - C)
	Initial Cost	OMR* Cost	Total		
1991	0	17	17	0	-17
1992	1,015	20	1,035	0	-1,035
1993	2,522	42	2,564	0	-2,564
1994	559	152	711	200	-511
1995	2,039	180	2,219	570	-1,648
1996		215	215	1,347	1,132
1997		215	215	1,347	1,132
1998		215	215	1,347	1,132
1999		215	215	1,347	1,132
2000		215	215	1,347	1,132
2001		215	215	1,347	1,132
2002		215	215	1,347	1,132
2003		215	215	1,347	1,132
2004		215	215	1,347	1,132
2005		215	215	1,347	1,132
2006		369	369	1,347	978
2007		215	215	1,347	1,132
2008		215	215	1,347	1,132
2009		215	215	1,347	1,132
2010		215	215	1,347	1,132
FIRR =					13.5 %

* O & M cost and Replacement cost

** Unit Price of Lot = US\$ 0.5/m²

**Table M - 6 PROFILE OF NATIONAL FINANCE CORPORATION
(CFN)**

(1/2)

1. GENERAL

CFN is the largest finance entity in Ecuador, mainly providing credits for development activities such as manufacturing industry, agro-industry, fishing, tourism, mining and export of non-traditional products. Major fund sources are from international development finance institutions such as IDB, CAF etc.

In 1992, CFN is scheduled to change its functions. Major changes are as follows:

- 1) Credits can be provided for a wider range of activities: all the sectors except commercial and housing sectors;
- 2) CFN will become "Second floor bank": no loans will be provided directly for the borrowers (loans will be provided through commercial banks);
- 3) Subsidies from the Government would be no longer expected and no preferential loan be provided to the borrowers;
- 4) The borrowers will be confined to private sectors.

CFN can provide loan only for foreign portion of the Project under the agreement with WB, IDB, CAF and IMF.

2. TERMS OF LOAN

Finace for foreign currency portion of project

- 1) Interest rate: 56% (subject to recalculation every half a year)
- 2) Repayment period (Grace period): 10 years (4 years)
- 3) Repayment method: a new repayment method will be introduced in 1992, in which the equivalent of the difference between nominal and actual interest rates will be capitalized during the grace and repayment period.

$$\text{Real interest rate} = \frac{(1 + NI/2)^2}{1 + I} - 1$$

where NI is nominal interest rate and I inflation rate.

If the construction period is more than 2 ~ 3 years, lending in each year is negotiable.

- 4) Amount of loan: US\$ 3 million at most (the consultation will be needed with the international development finance institutions for over US\$ 3 million)
- 5) Guarantee: 125 % of amount given at time or mortgage. The amount is deminishing as principal repayment increases. Fixed capital including partly completed facilities can be a mortgage, valued at market price.

Finace for local expenses (working capital)

- 1) Interest rate: 50% at the moment , but increased to 56%
 - 2) Repayment (Grace) period: 2 years (Half a year)
 - 3) Amount of loan: 400 million Sucre, but may increase
-

**Table M - 6 PROFILE OF NATIONAL FINANCE CORPORATION
(CFN)**

(2/2)

3. CRITERIA FOR DECISION MAKING ON FINANCING

1) FIRR

FIRR on investment : more than 12% in real terms

FIRR on equity : over 12% in real terms

2) Equity

Ratio of equity to capital cost (fixed and working) is more than 30%. But, it depends on projects: even less than 30%, permitted with adequate flow of cash, lower risk (marketing, demand, technical aspects etc.)

4. POSSIBILITY OF STOCKHOLDER

CFN can be a stockholder when :

1) the FIRR of the project is more than 12%;

2) the period of development of the project is less than three years, so that CFN can sell the stock on stock market.

Although no dividends are required, CFN keeps its stocks only for three years and it should not be a major stockholder (its share of stocks 50% at maximum)

**Table M - 7 PROFILE OF DEVELOPMENT BANK OF ECUADOR
(BEDE)**

1. GENERAL

BEDE was established in 1979 to provide loan for public sector development projects such as education, health, potable water, sewerage etc. It owes its major fund to Ministry of Finance and national development fund, earmarked oil revenues etc.

Its lending has been confined to non-profit institutions, except, at least, one case (TAPA, a mixed telephone company in Cuenca). It has no experiences in channeling funds into the industrial sector.

There is, however, an exemption when CONADE and Procuraduria General del Estado permit BEDE to provide loans to private entities with social or public purposes.

2. TERMS OF LOAN

- 1) Interest rate: 43%
 - 2) Other charges: 5% (commission, and others)
 - 3) Repayment period (Grace period): 5 ~ 10 years (1 ~ 2 years)
 - 4) Repayment method: equal amount of principal and payment of interest during construction
-

Table M - 8 FORECAST OF DEPRECIATION OF LOCAL CURRENCY

Year	Real OER at middle of Year (S./US\$)	Local Price Index at middle of Year	Foreign Price Index at middle of Year*	Ratio of Price Indexes	Nominal OER at middle of Year (S./US\$)	Change in Nominal OER (%)
0	1,150					
1	1,150	150	103	1.45	1,673	45.5
2	1,150	225	106	2.12	2,434	45.5
3	1,150	338	110	3.08	3,542	45.5
4	1,150	506	113	4.48	5,153	45.5
5	1,150	759	116	6.52	7,497	45.5

Notes: * Based on average annual growth rate of MUV index (3.1% per annum) during the period from 1991 to 2005 forecasted by World Bank ("Price prospects for Major Primary Commodities 1990 - 2005", 1990)

OER: Official Exchange Rate

Table M-9 PROJECT COST (INTERNAL COST)

Cost Items	1992		1993		1994		1995		TOTAL	
	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
I. CONSTRUCTION COST										
1. Land Leveling	0	152	0	0	0	0	0	0	0	152
2. Infrastructure	0	0	0	0	0	0	0	0	0	0
1) Road (Main / Submain Road)	0	0	0	105	105	0	0	0	0	105
2) Drainage	0	125	0	250	250	0	0	0	0	375
3) Water Supply	0	0	0	0	0	0	0	0	0	0
4) Sewerage	394	102	496	789	203	992	0	0	1,183	305
5) Solid Waste Disposal	0	0	0	250	250	0	0	0	0	250
6) Electric Facility	0	0	0	58	58	0	0	0	0	58
7) Telecommunication	0	0	0	0	0	0	0	0	0	0
Sub-total	394	227	621	789	866	1,654	0	0	1,183	1,488
3. Standard Factory	0	0	23	165	187	53	382	435	202	1,464
4. Administrative Facility	0	0	0	10	99	109	0	0	0	109
5. Service Facility (Exclu. Gas Station)	0	0	0	0	0	0	0	0	10	99
6. Park, Sports park	0	0	0	0	0	0	0	0	10	104
7. Others (Gate, Fence, Bus Terminal)	0	0	0	0	0	0	0	0	67	67
Total	394	378	773	821	1,183	2,005	53	382	435	213
II. ENGINEERING AND ADMINISTRATION										
	32	30	62	66	95	160	4	31	35	17
III. PROMOTION COST										
	37	26	63	75	52	126	75	52	126	261
IV. PHYSICAL CONTINGENCY										
	43	41	83	89	128	216	6	41	47	23
V. TOTAL	506	475	981	1,050	1,457	2,508	137	506	643	327
VI. PRICE CONTINGENCY	114	107	220	879	1,220	2,099	241	888	1,129	1,025
GROUND TOTAL	619	582	1,202	1,929	2,678	4,607	378	1,394	1,772	1,352
1991										
F.C.	L.C.	Total	F.C.	L.C.	Total	F.C.	L.C.	Total	F.C.	L.C.
0	19	19	0	23	23	0	48	48	0	61
0	0	0	0	0	0	0	0	0	11	11
0	19	19	0	23	23	0	48	48	0	72
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	87	87
0	0	0	0	0	0	0	0	0	3	4
0	0	0	0	0	0	0	0	0	1	2
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	92	93
0	19	19	0	23	23	0	48	48	1	164
0	0	0	0	5	5	0	40	40	1	288
0	19	19	0	28	28	0	88	88	2	452
III. TOTAL	0	19	19	0	23	23	0	48	48	1
IV. PRICE ESCALATION	0	0	0	5	5	0	40	40	1	288
GROUND TOTAL	0	19	19	0	28	28	0	88	88	2
1996 & thereafter										
F.C.	L.C.	Total	F.C.	L.C.	Total	F.C.	L.C.	Total	F.C.	L.C.
0	77	77	0	22	22	0	95	95	0	99
0	0	0	0	0	0	0	0	0	0	0
0	77	77	0	22	22	0	95	95	0	99
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	87	87
0	0	0	0	0	0	0	0	0	6	40
0	0	0	0	0	0	0	0	0	1	2
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	2	2
0	0	0	0	0	0	0	0	0	102	102
0	19	19	0	23	23	0	48	48	2	195
0	0	0	0	5	5	0	40	40	1	288
0	19	19	0	28	28	0	88	88	2	452
III. TOTAL	0	19	19	0	23	23	0	48	48	1
IV. PRICE ESCALATION	0	0	0	5	5	0	40	40	1	288
GROUND TOTAL	0	19	19	0	28	28	0	88	88	2

Remarks: 1) Exchange rate: 1 US\$ = S./ 1,150; 2) Inflation rate: 56% per annum; 3) Disbursement at the beginning of year except for 1992 (at the middle of year)

Table M - 10 SIMPLIFIED INCOME AND CASH FLOW FORECASTS
(ALTERNATIVE 1 : Case 1)*

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2010
																	(\$/ milli., Current Prices)
REVENUE																	
Gross Revenue	0	0	0	479	2,224	8,551	13,146	19,832	29,560	43,715	64,310	94,276	137,876	201,315	293,618	427,918	1,923,234
COST**																	
Operating cost (Promo., O&M)	19	105	319	802	1,335	1,469	2,203	3,305	4,957	7,436	11,154	16,731	25,096	37,645	56,467	84,700	428,796
Interest & Other Charges																	
1) CFN (Foreign Portion)	0	28	247	397	708	1,040	1,473	1,882	2,311	2,588	2,617	2,109	1,085	660	0	0	
2) BEDE	0	119	1,504	2,105	5,925	5,737	5,474	4,729	3,984	3,239	2,495	1,750	1,038	482	0	0	
3) CFN (Working Capital)	0	0	0	2	199	583	1,493	2,413	3,746	5,387	7,407	9,658	11,743	12,099	7,374	877	
Sub-total	0	147	1,752	2,701	7,216	8,270	9,559	10,556	11,682	13,234	14,770	15,602	14,222	8,516	877		
Total Cost	19	252	2,072	3,502	8,551	9,739	11,563	13,661	16,640	20,670	25,924	32,333	39,318	46,160	57,344	84,700	428,796
NET INCOME	-19	-252	-2,072	-3,024	-6,267	-1,188	1,583	6,171	12,921	23,046	38,386	61,943	98,558	155,154	236,274	343,218	1,494,438
CASH FLOW																	
SOURCES OF FUNDS***																	
Net Income	-19	-252	-2,072	-3,024	-6,267	-1,188	1,583	6,171	12,921	23,046	38,386	61,943	98,558	155,154	236,274	343,218	1,494,438
Equity	19	191	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Government Contribution																	
Loan Receipt																	
1) CFN (Foreign Portion)	0	619	1,929	380	1,359												
2) BEDE	0	551	2,583	1,252	8,027												
3) CFN (Working Capital)	0	16	1,952	4,976	13,423	20,686	35,040	50,027	69,392	91,324	113,520	123,691	86,680				
Sub-total	0	1,186	6,464	6,607	22,808	20,686	35,040	50,027	69,392	91,324	113,520	123,691	86,680				
Total Sources	0	1,124	4,392	3,584	16,541	19,498	36,623	56,198	82,313	114,369	151,906	185,634	185,238	155,154	236,274	343,218	1,494,438
USES OF FUNDS																	
Project Investment	0	1,124	4,375	1,425	9,071												
Loan Repayment																	
1) CFN (Foreign Portion)	0	0	0	0	0	577	3,037	4,888	8,717	12,794	18,778	21,796	10,095	10,506	0	0	
2) BEDE	0	0	0	69	392	548	1,551	1,551	1,551	1,551	1,551	1,483	1,160	1,003	0	0	
3) CFN (Working Capital)	0	0	17	2,090	7,079	18,374	32,035	49,759	72,045	100,024	131,576	162,356	173,983	122,595	23,402		
Sub-total	0	0	17	2,159	7,470	19,498	36,623	56,198	82,313	114,369	151,906	185,634	185,238	134,104	23,402		
Total Uses	0	1,124	4,392	3,584	16,541	19,498	36,623	56,198	82,313	114,369	151,906	185,634	185,238	134,104	23,402	0	0
SURPLUS (DEFICIT)	0	0	0	0	0	0	0	0	0	0	0	0	0	21,050	212,871	343,218	1,494,438
CUMULATIVE SURPLUS	0	0	0	0	0	0	0	0	0	0	0	0	0	21,050	233,921	577,139	

Remarks:
* Alternative 1: CFN(Foreign portion), BEDE(Local portion), CFN(Working Capital), Case 1: Equity without CFN and others)
** ZOFREE exempts from tax. Depreciation is excluded.
*** Depreciation is excluded.

Table M - 11 PROJECTION OF INCREASE IN EQUITY OF ZOFREE

Case 1 (without CFN's and others' participation)				(S/. million in Current Prices)			
	Equity Employed	Equity + Repayment	O&M + Promotion*	Equity Unemployed	Interests Receivable**	Tax on Interests after Tax	Interests
1991	208	19	19	189	2	0	2
1992	191	191	207	0	0	0	0
1993	0	0	1,933	0	0	0	0
1994	0	0	3,166	0			

Remarks: * Local portion of O&M and promotion costs

** Interests receivable in 1991 is calculated on the paid capital of S./5 million as of June, 1991.
S./208 million is scheduled to be paid by the end of 1991.

Case 2 (with CFN's and others' participation)				(S/. million in Current Prices)			
	Equity* Employed	Equity + Repayment	O&M + Promotion**	Equity Unemployed	Interests Receivable***	Tax on Interests after Tax	Interests
1991	208	19	19	189	2	0	2
1992	956	207	207	749	359	29	331
1993	1,079	1,079	1,933	0	0	0	0
1994	0	0	3,166	0			

Remarks: * Additional equity of S/. 765 million is assumed to be provided in 1992.

** Local portion of O&M and promotion costs

*** Interests receivable in 1991 is calculated on the paid capital of S./5 million as of June, 1991.
S./208 million is scheduled to be paid by the end of 1991.

Table M - 12 LOAN REPAYMENT FOR FOREIGN LOAN †

(\$/ million in Current prices)

NO. Year	FOREIGN LOAN				FIRST YEAR LOAN				SECOND YEAR LOAN				THIRD YEAR LOAN				FOURTH YEAR LOAN				TOTAL										
	Cumulative Debt		Repayment		Cumulative Debt		Repayment		Cumulative Debt		Repayment		Cumulative Debt		Repayment		Cumulative Debt		Repayment		Interest		Principal		Total						
	Inter. Cap.*	Before**	After***	Interest	Principal	Total	Inter. Cap.*	Before**	After***	Interest	Principal	Total	Inter. Cap.*	Before**	After***	Interest	Principal	Total	Inter. Cap.*	Before**	After***	Interest	Principal	Total	Interest	Principal	Total				
1 1992	619	126	746	28	0	28	28	746	28	0	28	28	746	28	0	28	0	28	28	746	28	0	28	0	28	28	746	28	0	28	
2 1993	1,929	349	1,094	69	0	69	69	1,094	69	0	69	69	1,094	69	0	69	0	69	69	1,094	69	0	69	0	69	69	1,094	69	0	69	
3 1994	380	512	1,606	101	0	101	101	1,606	101	0	101	101	1,606	101	0	101	0	101	101	1,606	101	0	101	0	101	101	1,606	101	0	101	
4 1995	1,359	751	2,357	148	0	148	148	2,357	148	0	148	148	2,357	148	0	148	0	148	148	2,357	148	0	148	0	148	148	2,357	148	0	148	
5 1996		1,103	3,460	2,883	218	794	794	2,883	218	577	794	794	2,883	218	577	794	0	794	794	2,883	218	577	794	0	794	794	2,883	218	577	794	
6 1997		1,349	4,232	3,386	266	846	846	3,386	266	846	846	3,386	266	846	846	0	846	846	3,386	266	846	846	0	846	846	3,386	266	846	846		
7 1998		1,584	4,969	3,727	312	1,242	1,555	3,727	312	1,242	1,555	1,555	3,727	312	1,242	1,555	0	1,555	1,555	3,727	312	1,242	1,555	0	1,555	1,555	3,727	312	1,242	1,555	
8 1999		1,743	5,470	3,647	344	1,823	2,167	3,647	344	1,823	2,167	2,167	3,647	344	1,823	2,167	0	2,167	2,167	3,647	344	1,823	2,167	0	2,167	2,167	3,647	344	1,823	2,167	
9 2000		1,706	5,352	2,676	336	2,676	3,013	2,676	336	2,676	3,013	3,013	2,676	336	2,676	3,013	0	3,013	3,013	2,676	336	2,676	3,013	0	3,013	3,013	2,676	336	2,676	3,013	
10 2001		1,252	3,928	0	247	3,928	4,175	0	247	3,928	4,175	4,175	0	247	3,928	4,175	0	4,175	4,175	0	247	3,928	4,175	0	4,175	4,175	0	247	3,928	4,175	
11 2002																															
12 2003																															
13 2004																															
14 2005																															
Total	4,287	11,093	42,129	13,162	2,069	11,093	13,162	42,129	13,162	2,069	11,093	13,162	42,129	13,162	2,069	11,093	13,162	42,129	13,162	2,069	11,093	13,162	42,129	13,162	2,069	11,093	13,162	42,129	13,162	42,129	50,059

NO. Year	THIRD YEAR LOAN				FOURTH YEAR LOAN				TOTAL			
	Cumulative Debt		Repayment		Cumulative Debt		Repayment		Interest		Principal	
	Inter. Cap.*	Before**	After***	Interest	Principal	Total	Inter. Cap.*	Before**	After***	Interest	Principal	Total
1 1992												
2 1993												
3 1994		178	557	35	0	35						
4 1995		261	818	51	0	51	636	1,994	125	0	125	708
5 1996		383	1,201	75	0	75	933	2,927	184	0	184	1,040
6 1997		562	1,763	111	0	111	1,369	4,296	270	0	270	1,473
7 1998		824	2,587	163	431	594	2,009	6,305	396	0	396	1,882
8 1999		1,008	3,164	199	633	832	2,949	9,255	582	1,542	2,311	8,717
9 2000		1,184	3,715	278	929	1,162	3,607	11,319	712	2,264	2,975	12,794
10 2001		1,303	4,090	272	257	1,620	4,236	13,291	836	3,323	4,158	18,778
11 2002		1,275	4,002	201	252	2,253	4,663	14,631	920	4,877	2,109	21,796
12 2003		936	2,937	0	185	2,937	4,562	14,316	900	7,158	8,058	10,095
13 2004							3,348	10,506	660	10,506	11,167	11,167
14 2005												
Total	8,294	42,129	13,162	2,069	11,093	13,162	42,129	13,162	2,069	11,093	13,162	42,129

Remarks: † Including foreign portion of O&M cost until 1995

Finance source is assumed to be CFN (Interest rate: 56%, Repayment period (Grace period): 10 (4))

* Interest Capitalization. ** Total before repayment of principal. *** Total after repayment of principal. **** Sum of interest capitalization plus principal

Table M - 13 LOAN REPAYMENT FOR LOCAL LOAN†

(\$ million in Current prices)

NO.	Year	LOCAL LOAN		CUMULATIVE DEBT(First Year)		REPAYMENT (First Year)		CUMULATIVE DEBT(Second Year)		REPAYMENT (Second Year)	
		Year	Loan	Interest	Principal	Total	Interest	Principal	Total	Interest	Principal
1	1992		551	551	119	0	119				
2	1993		2,583	551	264	0	264	2,583		1,240	0
3	1994		1,252	551	264	69	333	2,583		1,240	0
4	1995		8,027	482	231	69	300	2,583		1,240	323
5	1996			413	198	69	267	2,260		1,085	323
6	1997			344	165	69	234	1,937		930	323
7	1998			275	132	69	201	1,614		775	323
8	1999			206	99	69	168	1,291		620	323
9	2000			138	66	69	135	969		465	323
10	2001			69	33	69	102	646		310	323
11	2002			0				323		155	323
12	2003							0			
13	2004										
14	2005										
Total			12,412	1,573	551	2,124		8,058		2,583	10,641

NO.	Year	CUMULATIVE DEBT(Third Year)		REPAYMENT (Third Year)		CUMULATIVE DEBT(Fourth Year)		REPAYMENT (Fourth Year)		TOTAL REPAYMENT	
		Year	Debt	Interest	Principal	Total	Year	Debt	Interest	Principal	Total
1	1992									119	0
2	1993									1,504	0
3	1994									2,105	69
4	1995									5,925	392
5	1996									5,737	548
6	1997									5,474	1,551
7	1998									4,729	1,551
8	1999									3,984	1,551
9	2000									3,239	1,551
10	2001									2,495	1,551
11	2002									1,750	1,483
12	2003									1,038	1,160
13	2004									482	1,003
14	2005									0	0
Total										38,580	12,412
										33,071	50,992

Remarks: † Excluding the local portion of promotion cost

Finance source is assumed to be BEDE (Interest rate and other charges: 48%, Repayment period (Grace period): 10 (2) years

Table M - 14 LOAN REPAYMENT FOR FUND FOR WORKING CAPITAL (2/2)

NO. YEAR	FOURTH YEAR (1st HALF)			FIFTH YEAR (2nd HALF)			SIXTH YEAR (1st HALF)			SEVENTH YEAR (2nd HALF)			EIGHTH YEAR (1st HALF)			NINTH YEAR (2nd HALF)			TENTH YEAR (1st HALF)			ELEVENTH YEAR (2nd HALF)			TWELFTH YEAR (1st HALF)			THIRTEENTH YEAR (2nd HALF)								
	REPAYMENT			REPAYMENT			REPAYMENT			REPAYMENT			REPAYMENT			REPAYMENT			REPAYMENT			REPAYMENT			REPAYMENT			REPAYMENT								
	Prin	Int	Total	Prin	Int	Total	Prin	Int	Total	Prin	Int	Total	Prin	Int	Total	Prin	Int	Total	Prin	Int	Total	Prin	Int	Total	Prin	Int	Total	Prin	Int	Total						
1-1992 (1st Half)	0	3,459	3,459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
2-1993 (1st Half)	705	4,106	4,811	2,691	11,955	14,646	0	8,715	8,715	0	11,971	11,971	0	4,306	4,306	0	4,964	4,964	0	15,982	15,982	0	6,373	6,373	0	10,157	10,157	0	0	0	0					
3-1994 (1st Half)	366	3,342	3,708	1,030	9,287	10,317	1,777	10,932	12,709	2,464	14,412	16,876	4,430	4,536	9,066	310	4,210	4,520	4,933	5,704	6,517	3,238	10,120	12,447	17,717	375	7,973	8,348	3,906	23,693	13,376	964	7,989	8,952		
4-1995 (1st Half)	301	2,312	2,613	75	5,012	5,087	381	5,793	6,012	958	3,689	4,647	190	5,069	5,259	1,175	6,983	7,158	201	6,993	7,224	2,299	10,246	11,763	346	9,237	9,583	1,264	11,142	11,406	694	9,255	9,949			
5-1996 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6-1997 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7-1998 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8-1999 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9-2000 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10-2001 (1st Half)	0	52,036	52,036	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11-2002 (1st Half)	0	10,772	10,772	65,668	42,408	108,076	12,372	78,658	91,030	0	95,115	95,115	0	64,580	64,580	0	64,580	64,580	0	46,443	46,443	0	18,697	18,697	0	40,327	40,327	0	16,447	16,447	0	0	0	0	0	
12-2003 (1st Half)	0	6,046	6,046	1,161	25,228	26,389	3,910	29,138	33,048	3,672	37,153	40,825	2,667	39,812	42,479	13,187	37,366	50,649	3,138	51,013	54,151	9,469	55,012	57,271	2,091	63,923	66,014	0	60,330	62,321	66,999	4,572	62,121	66,699		
13-2004 (1st Half)	0	3,328	3,328	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14-2005 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	3,071	93,754	96,825	1,027	14,607	15,634	15,776	17,520	17,520	1,235	17,545	18,785	21,284	899	12,276	13,655	17,820	1,235	17,545	18,785	21,284	1,038	23,264	24,302	20,065	1,976	26,089	28,065	30,061	3,952	35,463	37,437	4,066	39,499	41,565	
1-1992 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2-1993 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-1994 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-1995 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5-1996 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-1997 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-1998 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-1999 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9-2000 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-2001 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11-2002 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12-2003 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13-2004 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-2005 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Remarks: * Finance source for working capital is assumed to be CTA (Fund for Working Capital, Interest rate: 5.0%, Repayment period (Grace period): 2 (0.5) years)

† Interest capitalized, ** Total before repayment of principal, *** Total after repayment of principal, **** Sum of interest capitalized and the principal

Table M - 15 SIMPLIFIED INCOME AND CASH FLOW FORECASTS
(ALTERNATIVE 1 : Case 2)*

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2010
(\$ mil., Current Prices)																	
REVENUE																	
Gross Revenue	0	0	0	479	2,284	8,551	13,146	19,832	29,560	43,715	64,310	94,276	137,876	201,315	293,618	427,918	1,923,234
COST**																	
Operating cost (Promo., O&M)	19	105	319	802	1,335	1,469	2,203	3,305	4,957	7,436	11,154	16,731	25,096	37,645	56,467	84,700	428,796
Interest & Other Charges	0	28	247	397	708	1,040	1,473	1,882	2,311	2,588	2,617	2,109	1,085	660	0	0	0
1) CFN (Foreign Portion)	0	119	1,504	2,105	5,925	5,737	5,474	4,729	3,984	3,239	2,495	1,750	1,038	482	0	0	0
2) BEDE	0	0	0	86	407	1,218	1,982	3,074	4,341	5,777	7,121	7,793	5,603	731	0	0	0
3) CFN (Working Capital)	0	147	1,751	2,589	7,040	7,994	8,929	9,685	10,636	11,604	12,233	11,652	7,726	1,873	0	0	0
Sub-total	19	252	2,070	3,390	8,375	9,463	11,132	12,990	15,594	19,040	23,387	28,383	32,822	39,518	56,467	84,700	428,796
NET INCOME	-19	-252	-2,070	-2,911	-6,092	-912	2,014	6,842	13,967	24,675	40,923	65,893	105,054	161,797	237,151	343,218	1,494,438
CASH FLOW																	
SOURCES OF FUNDS***																	
Net Income	-19	-252	-2,070	-2,911	-6,092	-912	2,014	6,842	13,967	24,675	40,923	65,893	105,054	161,797	237,151	343,218	1,494,438
Equity	19	207	1,079	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Government Contribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Loan Receipt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1) CFN (Foreign Portion)	0	619	1,929	380	1,359	0	0	0	0	0	0	0	0	0	0	0	0
2) BEDE	0	551	2,583	1,252	8,027	0	0	0	0	0	0	0	0	0	0	0	0
3) CFN (Working Capital)	0	1,170	5,366	5,313	20,253	16,775	29,039	40,616	54,704	68,424	77,996	67,962	67,962	67,962	67,962	67,962	67,962
Sub-total	0	1,170	5,366	5,313	20,253	16,775	29,039	40,616	54,704	68,424	77,996	67,962	67,962	67,962	67,962	67,962	67,962
Total Sources	0	1,124	4,375	2,402	14,162	15,862	31,053	47,458	68,670	93,100	118,719	133,855	105,054	161,797	237,151	343,218	1,494,438
USES OF FUNDS																	
Project Investment	0	1,124	4,375	1,425	9,071	0	0	0	0	0	0	0	0	0	0	0	0
Loan Repayment	0	0	0	0	0	577	3,037	4,888	8,717	12,794	18,778	21,796	10,095	10,506	10,506	10,506	10,506
1) CFN (Foreign Portion)	0	0	0	69	392	548	1,551	1,551	1,551	1,551	1,551	1,483	1,160	1,003	1,003	1,003	1,003
2) BEDE	0	0	0	908	4,699	14,738	26,465	41,019	58,402	78,754	98,390	110,577	90,073	19,566	19,566	19,566	19,566
3) CFN (Working Capital)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total	0	0	0	977	5,091	15,862	31,053	47,458	68,670	93,100	118,719	133,855	101,328	31,076	31,076	31,076	31,076
Total Uses	0	1,124	4,375	2,402	14,162	15,862	31,053	47,458	68,670	93,100	118,719	133,855	101,328	31,076	31,076	31,076	31,076
SURPLUS (DEFICIT)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE SURPLUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Remarks:

* Alternative 1: CFN(Foreign portion), BEDE(Local portion), CFN(Working Capital), Case 2: Equity is assumed to increase by \$/ 765 million in 1992)

** ZOFREE exempts from tax. Depreciation is excluded.

*** Depreciation is excluded.

Table M - 16 SIMPLIFIED INCOME AND CASH FLOW FORECASTS
(ALTERNATIVE 2 : Case 1)*

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2010
(\$/ mill., Current Prices)																	
REVENUE																	
Gross Revenue	0	0	0	479	2,284	8,551	13,146	19,832	29,560	43,715	64,310	94,276	137,876	201,315	293,618	427,918	1,923,234
COST**																	
Operating cost (Promo., O&M)	19	105	319	802	1,335	1,469	2,203	3,305	4,957	7,436	11,154	16,731	25,096	37,645	56,467	84,700	428,796
Interests & Other Charges																	
1) CFN (Foreign Portion)	0	28	247	397	708	1,040	1,473	1,882	2,311	2,588	2,617	2,109	1,085	660	0		
2) Commercial Bank (Local Portion)	0	0	388	701	4,495	0											
3) CFN (Working Capital)	0	0	0	138	465	1,813	2,253	2,128	2,908	2,997	2,316	643	17				
Sub-total	0	28	635	1,236	5,668	2,853	3,726	4,010	5,219	5,585	4,934	2,752	1,102	660	0		
Total Cost	19	133	955	2,038	7,003	4,322	5,930	7,315	10,176	13,021	16,088	19,483	26,198	38,305	56,467	84,700	428,796
NET INCOME	-19	-133	-955	-1,559	-4,720	-4,229	-7,216	-12,517	-19,385	-30,694	-48,222	-74,793	-111,678	-163,010	-237,151	-343,218	-1,494,438
CASH FLOW																	
SOURCES OF FUNDS***																	
Net Income	-19	-133	-955	-1,559	-4,720	-4,229	-7,216	-12,517	-19,385	-30,694	-48,222	-74,793	-111,678	-163,010	-237,151	-343,218	-1,494,438
Equity	19	88	149														
Government Contribution		551	1,889	0	0												
Loan Receipt																	
1) CFN (Foreign Portion)	0	619	1,929	380	1,359												
2) Commercial Bank (Local Portion)	0	0	694	1,252	8,027												
3) CFN (Working Capital)	0	0	1,362	4,053	17,992	17,788	27,659	30,297	29,572	25,248	6,275						
Sub-total	0	619	3,985	5,684	27,378	17,788	27,659	30,297	29,572	25,248	6,275						
Total Sources	0	1,124	5,069	4,125	22,658	22,017	34,875	42,814	48,956	55,942	54,498	74,793	111,678	163,010	237,151	343,218	1,494,438
USES OF FUNDS																	
Project Investment	0	1,124	4,375	1,425	9,071												
Loan Repayment																	
1) CFN (Foreign Portion)	0	0	0	0	0	577	3,037	4,888	8,717	12,794	18,778	21,796	10,095	10,506	0		
2) Commercial Bank (Local Portion)	0	0	694	1,252	8,027	0											
3) CFN (Working Capital)	0	0	0	1,449	5,560	21,440	31,839	37,926	40,239	43,149	35,720	13,537	461				
Sub-total	0	0	694	2,701	13,587	22,017	34,875	42,814	48,956	55,942	54,498	35,332	10,556	10,506	0		
Total Uses	0	1,124	5,069	4,125	22,658	22,017	34,875	42,814	48,956	55,942	54,498	35,332	10,556	10,506	0	0	0
SURPLUS (DEFICIT)	0	0	0	0	0	0	0	0	0	0	0	39,461	101,122	152,503	237,151	343,218	1,494,438
CUMULATIVE SURPLUS	0	0	0	0	0	0	0	0	0	0	0	39,461	140,583	293,086	530,237	873,455	

Remarks:
 * Alternative 2, Case 1 : CFN(Foreign portion), Gov. contribution(Local portion of infrastructure), Commercial loan (Local portion exclusive of infrastructure), CFN(Working Capital) :
 No participation of CFN and others in equity
 ** ZOFREE exempts from tax. Depreciation is excluded.
 *** Depreciation is excluded.

Table M - 17 LOAN REPAYMENT FOR LOCAL LOAN†

(\$ million, Current prices)

NO. Year	LOCAL LOAN	CUMULATIVE REPAYMENT (First Year)		CUMULATIVE DEBT (Second Year)		CUMULATIVE REPAYMENT (Second Year)	
		Interest	Principal	Interest	Principal	Interest	Principal
1 1992	0						
2 1993	694			694	388	694	1,082
3 1994	1,252						
4 1995	8,027						
5 1996							
6 1997							
7 1998							
8 1999							
9 2000							
10 2001							
11 2002							
12 2003							
13 2004							
14 2005							
Total	9,972	0	0	0	388	694	1,082

NO. Year	CUMULATIVE REPAYMENT (Third Year)		CUMULATIVE DEBT (Fourth Year)		CUMULATIVE REPAYMENT (Total)	
	Interest	Principal	Interest	Principal	Interest	Principal
1 1992						
2 1993					388	694
3 1994	1,252	701	1,252	1,953	701	1,252
4 1995			8,027	4,495	4,495	8,027
5 1996						
6 1997						
7 1998						
8 1999						
9 2000						
10 2001						
11 2002						
12 2003						
13 2004						
14 2005						
Total	701	1,252	1,953	4,495	8,027	12,522
Total				5,584	9,972	15,557

Notes: † Excluding the local portion of promotion cost
 Finance source is assumed to be commercial bank (Interest rate : 56%, Repayment period (Grace period): 1 (0) year.

Table M - 18 LOAN REPAYMENT FOR WORKING CAPITAL (1/2) †

NO. Year	LOCAL LOAN	FIRST YEAR (1ST HALF)			SECOND YEAR (2ND HALF)			THIRD YEAR (1ST HALF)		
		CUMULATIVE DEBT	REPAYMENT	Interest Principal Total	CUMULATIVE DEBT	REPAYMENT	Interest Principal Total	CUMULATIVE DEBT	REPAYMENT	Interest Principal Total
		C.I.*	Ref.**	Alt.**	C.I.*	Ref.**	Alt.**	C.I.*	Ref.**	Alt.**
1	1992									
2	1993 (1st Half)	0	0	0	0	0	0	0	0	0
2.5	1993 (2nd Half)	1,362	0	0	0	1,362	0	0	0	0
3	1994 (1st Half)	608	0	0	278	1,640	1,093	61	547	608
3.5	1994 (2nd Half)	3,445	0	0	223	1,316	658	49	658	707
4	1995 (1st Half)	2,675	0	0	134	792	0	30	792	822
4.5	1995 (2nd Half)	15,317	0	0						
5	1996 (1st Half)	7,572	0	0						
5.5	1996 (2nd Half)	10,216	0	0						
6	1997 (1st Half)	14,520	0	0						
6.5	1997 (2nd Half)	13,139	0	0						
7	1998 (1st Half)	14,692	0	0						
7.5	1998 (2nd Half)	15,605	0	0						
8	1999 (1st Half)	14,444	0	0						
8.5	1999 (2nd Half)	15,126	0	0						
9	2000 (1st Half)	13,223	0	0						
9.5	2000 (2nd Half)	12,026	0	0						
10	2001 (1st Half)	5,483	0	0						
10.5	2001 (2nd Half)	792	0	0						
Total	160,245	0	0	0	140	1,997	2,137	89	63	984
										354
										5,051
										5,405
										3,923
										275
										4,194

NO. Year	LOCAL LOAN	FIFTH YEAR (2nd HALF)			SIXTH YEAR (1ST HALF)			SEVENTH YEAR (1ST HALF)			EIGHTH YEAR (2nd HALF)		
		CUMULATIVE DEBT	REPAYMENT	Interest Principal Total	CUMULATIVE DEBT	REPAYMENT	Interest Principal Total	CUMULATIVE DEBT	REPAYMENT	Interest Principal Total	CUMULATIVE DEBT	REPAYMENT	Interest Principal Total
		C.I.*	Ref.**	Alt.**	C.I.*	Ref.**	Alt.**	C.I.*	Ref.**	Alt.**	C.I.*	Ref.**	Alt.**
1	1992												
2	1993 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0
2.5	1993 (2nd Half)	5,273	0	0	0	14,692	14,692	0	0	0	0	0	0
3	1994 (1st Half)	5,834	0	0	4,897	9,794	0	4,897	4,897	0	0	0	0
3.5	1994 (2nd Half)	6,349	0	0	1,998	11,793	5,896	441	5,896	6,337	3,183	18,788	12,526
4	1995 (1st Half)	7,644	0	0	1,203	7,099	7,364	0	265	7,099	2,545	15,081	7,540
4.5	1995 (2nd Half)	13,139	0	0							1,538	9,079	0
5	1996 (1st Half)	10,546	591	5,273							0	15,605	15,605
5.5	1996 (2nd Half)	10,546	475	6,349							702	6,263	6,965
6	1997 (1st Half)	13,139	286	7,644							7,540	8,104	2,947
6.5	1997 (2nd Half)	14,692	0	0							650	5,797	6,447
7	1998 (1st Half)	14,692	0	0							0	14,444	14,444
7.5	1998 (2nd Half)	15,605	475	6,349							522	6,979	7,501
8	1999 (1st Half)	15,126	0	0							314	8,403	0
8.5	1999 (2nd Half)	15,126	0	0							0	15,128	15,128
9	2000 (1st Half)	13,223	0	0							681	6,071	6,752
9.5	2000 (2nd Half)	12,026	0	0							546	7,310	7,856
10	2001 (1st Half)	5,483	0	0							1,491	8,801	0
10.5	2001 (2nd Half)	792	0	0							329	8,801	9,130
Total	19,266	1,352	19,266	20,618	17,893	706	17,893	18,599	22,882	1,605	22,882	24,487	21,180
													1,486
													22,180
													22,665
													22,182
													22,738

† Finance source for working capital is assumed to be CFN (Fund for Working Capital, Interest rate: 56%, Repayment period (Grace period): 2 (0.5) years)
 * Capitalized interest, ** Total before repayment of principal, *** Sum of interest capitalized and the principal.

Table M - 18 LOAN REPAYMENT FOR WORKING CAPITAL (2/2) †

(\$1. mill. Current prices)

NO. Year	THIRD YEAR (2nd Half)			FOURTH YEAR (1st Half)			FOURTH YEAR (2nd Half)			FIFTH YEAR (1st Half)		
	CUMULATIVE DEBT	REPAYMENT	Total	CUMULATIVE DEBT	REPAYMENT	Total	CUMULATIVE DEBT	REPAYMENT	Total	CUMULATIVE DEBT	REPAYMENT	Total
	C.I.*	Ref.**	Alt.***	C.I.*	Ref.**	Alt.***	C.I.*	Ref.**	Alt.***	C.I.*	Ref.**	Alt.***
1 1992												
2 1993 (1st Half)	0	15,317	15,317	0	0	0	0	0	0	0	0	0
2.5 1993 (2nd Half)	889	6,147	6,836	0	7,572	7,572	0	0	0	0	0	0
3 1994 (1st Half)	553	7,401	7,955	341	5,039	5,380	0	0	0	0	0	0
3.5 1994 (2nd Half)	2,508	14,803	17,311	1,545	9,117	10,662	0	0	0	0	0	0
4 1995 (1st Half)	1,510	8,911	10,421	1,240	7,318	8,558	2,084	12,300	14,384	4,100	4,560	8,664
4.5 1995 (2nd Half)	0	0	0	746	4,405	5,151	1,673	9,873	11,546	369	4,936	5,305
5 1996 (1st Half)	3,125	18,442	21,567	0	0	0	1,007	5,943	6,950	0	222	5,943
5.5 1996 (2nd Half)	2,508	14,803	17,311	0	0	0	0	0	0	0	0	0
6 1997 (1st Half)	1,510	8,911	10,421	0	0	0	0	0	0	0	0	0
6.5 1997 (2nd Half)	0	0	0	0	0	0	0	0	0	0	0	0
7 1998 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0
7.5 1998 (2nd Half)	0	0	0	0	0	0	0	0	0	0	0	0
8 1999 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0
8.5 1999 (2nd Half)	0	0	0	0	0	0	0	0	0	0	0	0
9 2000 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0
9.5 2000 (2nd Half)	0	0	0	0	0	0	0	0	0	0	0	0
10 2001 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0
10.5 2001 (2nd Half)	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,576	22,460	24,035	11,103	779	11,103	11,882	14,980	16,031	14,940	1,494	21,290

NO. Year	EIGHTH YEAR (1st Half)			EIGHTH YEAR (2nd Half)			NINTH YEAR (1st Half)			NINTH YEAR (2nd Half)			TOTAL REPAYMENT		
	CUMULATIVE DEBT	REPAYMENT	Total	CUMULATIVE DEBT	REPAYMENT	Total	CUMULATIVE DEBT	REPAYMENT	Total	CUMULATIVE DEBT	REPAYMENT	Total	C.I.*	Ref.**	Alt.***
	C.I.*	Ref.**	Alt.***	C.I.*	Ref.**	Alt.***	C.I.*	Ref.**	Alt.***	C.I.*	Ref.**	Alt.***	C.I.*	Ref.**	Alt.***
1 1992															
2 1993 (1st Half)	0	13,222	13,222	0	0	0	0	0	0	0	0	0	0	0	0
2.5 1993 (2nd Half)	2,697	15,919	18,616	0	12,026	12,026	0	0	0	0	0	0	0	0	0
3 1994 (1st Half)	2,165	12,776	14,941	478	6,349	7,027	541	4,826	5,367	0	5,483	5,483	61	547	608
3.5 1994 (2nd Half)	1,303	7,692	8,995	0	288	288	434	5,811	6,245	1,119	6,602	7,721	77	902	979
4 1995 (1st Half)	0	0	0	1,185	6,996	8,181	0	0	0	0	0	0	207	2,469	2,675
4.5 1995 (2nd Half)	0	0	0	0	0	0	0	0	0	0	0	0	258	3,092	3,350
5 1996 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	952	11,997	12,949
5.5 1996 (2nd Half)	0	0	0	0	0	0	0	0	0	0	0	0	1,066	16,670	17,736
6 1997 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	1,187	15,169	16,356
6.5 1997 (2nd Half)	0	0	0	0	0	0	0	0	0	0	0	0	1,338	18,233	19,571
7 1998 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	790	19,693	20,484
7.5 1998 (2nd Half)	0	0	0	0	0	0	0	0	0	0	0	0	1,429	19,803	21,232
8 1999 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	1,479	20,436	21,915
8.5 1999 (2nd Half)	0	0	0	0	0	0	0	0	0	0	0	0	1,542	22,129	23,671
9 2000 (1st Half)	2,697	15,919	18,616	0	0	0	0	0	0	0	0	0	1,455	21,019	22,475
9.5 2000 (2nd Half)	2,165	12,776	14,941	0	0	0	0	0	0	0	0	0	1,348	20,016	21,364
10 2001 (1st Half)	1,303	7,692	8,995	0	0	0	0	0	0	0	0	0	969	15,704	16,673
10.5 2001 (2nd Half)	0	0	0	0	0	0	0	0	0	0	0	0	495	9,964	10,459
11 2002 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	148	3,573	3,721
11.5 2002 (2nd Half)	0	0	0	0	0	0	0	0	0	0	0	0	17	461	478
12 2003 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.5 2003 (2nd Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,360	19,388	20,748	17,634	1,237	17,634	18,871	3,040	3,040	81	1,161	1,243	15,678	231,320	246,998

Note: † Finance source for working capital is assumed to be CIP (Fund for Working Capital, Interest rate: 5.6%, Repayment period: 2 (0.5) years)
 * Capitalized interest, ** Total before repayment of principal, *** Sum of interest capitalized and the principal.

Table M - 19 SIMPLIFIED INCOME AND CASH FLOW FORECASTS
(ALTERNATIVE 2, Case 2)*

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2010
(\$/ mill., Current Prices)																	
REVENUE:																	
Gross Revenue	0	0	0	479	2,284	8,551	13,146	19,832	29,560	43,715	64,310	94,276	137,876	201,315	293,618	427,918	1,923,234
COST**																	
Operating cost (Promo., O&M)	19	105	319	802	1,355	1,469	2,203	3,305	4,957	7,436	11,154	16,731	25,096	37,645	56,467	84,700	428,796
Interest & Other Charges																	
1) CFN (Foreign Portion)	0	2	24	71	229	336	490	691	934	1,111	1,249	1,273	1,085	660			
2) Commercial Bank (Local Portion)	0	0	388	701	4,495	0											
3) CFN (Working Capital)	0	0	0	112	391	1,621	1,773	1,630	923	112							
Sub-total	0	2	413	883	5,115	1,957	2,262	2,321	1,857	1,223	1,249	1,273	1,085	660	0		
Total Cost	19	107	732	1,685	6,450	3,426	4,466	5,625	6,814	8,659	12,403	18,003	26,181	38,305	56,467	84,700	428,796
NET INCOME:																	
	-19	-107	-732	-1,206	-4,166	-5,125	-8,680	-14,207	-22,746	-35,056	-51,908	-76,273	-111,695	-163,010	-237,151	-343,218	-1,494,438
CASH FLOW																	
SOURCES OF FUNDS***																	
Net Income	-19	-107	-732	-1,206	-4,166	-5,125	-8,680	-14,207	-22,746	-35,056	-51,908	-76,273	-111,695	-163,010	-237,151	-343,218	-1,494,438
Equity	19	62	186														
Government Contribution	0	1,124	3,610	0	0	0											
Loan Receipt																	
1) CFN (Foreign Portion)	0	46	208	380	1,359												
2) Commercial Bank (Local Portion)	0	0	694	1,252	8,027												
3) CFN (Working Capital)	0	0	1,102	3,423	16,531	14,039	17,548	11,134									
Sub-total	0	46	2,004	5,055	25,917	14,039	17,548	11,134									
Total Sources	0	1,124	5,069	3,849	21,750	19,164	26,228	25,341	22,746	35,056	51,908	76,273	111,695	163,010	237,151	343,218	1,494,438
USES OF FUNDS																	
Project Investment	0	1,124	4,375	1,425	9,071												
Loan Repayment																	
1) CFN (Foreign Portion)	0	0	0	0	0	42	299	870	2,819	4,137	6,072	8,487	10,095	10,506			
2) Commercial Bank (Local Portion)	0	0	694	1,252	8,027	0											
3) CFN (Working Capital)	0	0	0	1,172	4,653	19,121	25,930	24,471	15,169	3,002							
Sub-total	0	0	694	2,424	12,680	19,164	26,228	25,341	17,988	7,139	6,072	8,487	10,095	10,506	0		
Total Uses	0	1,124	5,069	3,849	21,750	19,164	26,228	25,341	17,988	7,139	6,072	8,487	10,095	10,506	0	0	0
SURPLUS (DEFICIT)	0	0	0	0	0	0	0	0	4,758	27,917	45,835	67,785	101,600	152,503	237,151	343,218	1,494,438
CUMULATIVE SURPLUS	0	0	0	0	0	0	0	0	4,758	32,675	78,511	146,296	247,896	400,400	637,550	980,768	

Remarks:

- * Alternative 2, Case 2: CFN(Foreign portion exclusive of infrastructure), Gov. contribution(Infrastructure portion), Commercial loan(Local portion exclusive of infrastructure), CFN(Working Capital) : No participation of CFN and others in equity
- ** ZOFREE extempis from tax. Depreciation is excluded.
- *** Depreciation is excluded.

Table M - 21 LOAN REPAYMENT FOR LOCAL LOAN†

(\$/ million, Current prices)

NO. Year	FUND REQU IREMENT	INFRA-STRUCTURE	BUILDING	LOCAL LOAN	CUMULATIVE DEBT(First Year)		CUMULATIVE DEBT(Second Year)		REPAYMENT (First Year)		REPAYMENT (Second Year)	
					Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal
1 1992	551	551	0	0	0	0	0	0	0	0	0	0
2 1993	2,583	1,889	694	694	694	694	694	388	694	388	694	1,082
3 1994	1,252	0	1,252	1,252	1,252	1,252	1,252	0	1,252	0	1,252	1,953
4 1995	8,027	0	8,027	8,027	8,027	8,027	8,027	0	8,027	0	8,027	12,522
5 1996												
6 1997												
7 1998												
8 1999												
9 2000												
10 2001												
11 2002												
12 2003												
13 2004												
14 2005												
Total	12,412	2,440	9,972	9,972	0	0	0	0	388	694	1,082	

NO. Year	CUMULATIVE DEBT(Third Year)		CUMULATIVE DEBT(Fourth Year)		REPAYMENT (Third Year)		REPAYMENT (Fourth Year)	
	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Principal
1 1992								
2 1993							388	694
3 1994	1,252	701	1,252	1,953	701	1,252	701	1,252
4 1995			8,027	8,027	4,495	8,027	4,495	8,027
5 1996								
6 1997								
7 1998								
8 1999								
9 2000								
10 2001								
11 2002								
12 2003								
13 2004								
14 2005								
Total	701	1,252	1,953	8,027	4,495	8,027	5,584	9,972

Remarks: † Excluding the local portion of promotion cost

Finance source is assumed to be commercial bank (Interest rate : 56%, Repayment period (Grace period): 1 (0) year

Table M - 22 LOAN REPAYMENT FOR WORKING CAPITAL*

NO. Year	FIRST YEAR (1st HALF)		SECOND YEAR (2nd HALF)		THIRD YEAR (3rd HALF)		FOURTH YEAR (4th HALF)		FIFTH YEAR (5th HALF)		SIXTH YEAR (6th HALF)		SEVENTH YEAR (7th HALF)		EIGHTH YEAR (8th HALF)		TOTAL REPAYMENT		
	LOAN	CUMULATIVE DEBT REPAYMENT	LOAN	CUMULATIVE DEBT REPAYMENT	LOAN	CUMULATIVE DEBT REPAYMENT	LOAN	CUMULATIVE DEBT REPAYMENT	LOAN	CUMULATIVE DEBT REPAYMENT	LOAN	CUMULATIVE DEBT REPAYMENT	LOAN	CUMULATIVE DEBT REPAYMENT	LOAN	CUMULATIVE DEBT REPAYMENT	Interest	Principal Total	
	C.I.*	Ref.**	AI.**	AI.**	C.I.*	Ref.**	AI.**	AI.**	C.I.*	Ref.**	AI.**	AI.**	C.I.*	Ref.**	AI.**	AI.**	C.I.*	Ref.**	AI.**
1 1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 1993 (1st Half)	1,102	0	0	0	0	1,102	1,102	0	0	0	0	0	0	0	0	0	0	0	0
2.5 1993 (2nd Half)	402	0	0	0	442	1,544	805	59	442	402	0	0	0	0	0	0	0	0	0
3 1994 (1st Half)	2,091	0	0	0	513	572	187	502	905	22	197	297	0	0	0	0	0	0	0
3.5 1994 (2nd Half)	2,229	0	0	0	190	1,065	533	40	475	238	18	238	256	598	3,259	2,355	132	1,170	1,308
4 1995 (1st Half)	2,229	0	0	0	109	641	605	0	11	246	297	0	0	0	0	0	0	0	0
4.5 1995 (2nd Half)	14,302	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 1996 (1st Half)	5,099	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.5 1996 (2nd Half)	10,881	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 1997 (1st Half)	10,255	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6.5 1997 (2nd Half)	7,293	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 1998 (1st Half)	5,974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.5 1998 (2nd Half)	5,164	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	63,278	0	0	0	117	3,016	1,730	72	72	4,238	302	4,238	4,680	3,210	229	3,296	3,428	20,971	22,442
1 1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 1993 (1st Half)	1,216	7,174	4,793	28	2,391	2,660	0	8,191	8,091	0	0	0	0	0	0	0	0	0	0
2.5 1993 (2nd Half)	304	3,243	3,447	364	3,750	6,416	1,608	9,779	6,416	0	0	0	0	0	0	0	0	0	0
3 1994 (1st Half)	3,803	4,106	2,092	13,247	9,332	441	4,116	4,577	0	7,293	7,293	0	0	0	0	0	0	0	0
3.5 1994 (2nd Half)	3,803	3,905	4,955	270	4,055	5,326	1,488	6,760	3,954	328	2,927	3,255	0	0	0	0	0	0	0
4 1995 (1st Half)	587	3,447	0	1,071	5,966	0	223	5,966	6,189	1,184	7,048	5,234	0	0	0	0	0	0	0
4.5 1995 (2nd Half)	0	5,959	5,959	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 1996 (1st Half)	1,216	7,174	4,793	28	2,391	2,660	0	8,191	8,091	0	0	0	0	0	0	0	0	0	0
5.5 1996 (2nd Half)	304	3,243	3,447	364	3,750	6,416	1,608	9,779	6,416	0	0	0	0	0	0	0	0	0	0
6 1997 (1st Half)	3,803	4,106	2,092	13,247	9,332	441	4,116	4,577	0	7,293	7,293	0	0	0	0	0	0	0	0
6.5 1997 (2nd Half)	587	3,447	0	1,071	5,966	0	223	5,966	6,189	1,184	7,048	5,234	0	0	0	0	0	0	0
7 1998 (1st Half)	0	5,959	5,959	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.5 1998 (2nd Half)	0	5,164	5,164	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 1999 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8.5 1999 (2nd Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 2000 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9.5 2000 (2nd Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	8,733	61	8,777	9,330	11,849	12,688	1,053	15,058	10,693	750	10,693	11,444	8,740	9,375	7,566	331	7,566	8,297	6,360

* Finance source for working capital is assumed to be CFN (funds for Working Capital), interest rate: 36%, Repayment period (Grace period): 2 (0.5) years.
 ** Capitalized interest, *** Total after repayment of principal, **** Total after repayment of principal, ***** Sum of interest capitalized and the principal.

Table M - 23 SIMPLIFIED INCOME AND CASH FLOW FORECASTS
(ALTERNATIVE 3)*

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2010
(\$/mill., Current Prices)																	
REVENUE																	
Gross Revenue	0	0	0	479	2,284	8,551	13,146	19,832	29,560	43,715	64,310	94,276	137,876	201,315	293,618	427,918	1,923,234
COST**																	
Operating cost (Promo., O&M)	19	105	319	802	1,335	1,469	2,203	3,305	4,957	7,436	11,154	16,731	25,096	37,645	56,467	84,700	428,796
Interest & Other Charges																	
1) CFN (Foreign Portion)	0	28	247	397	708	1,040	1,473	1,882	2,311	2,588	2,617	2,109	1,085	660	0		
2) Commercial (Local Portion)	0	137	1,446	701	4,495	0											
3) CFN (Working Capital)	0	0	138	1,389	3,963	12,218	19,573	54,785	130,845	314,880	760,854	1,843,102	4,470,490	10,853,039	26,372,028	64,118,058	1,789,755,321
Sub-total	0	165	1,831	2,487	9,166	13,258	21,046	56,667	133,156	317,467	763,471	1,845,211	4,471,575	10,853,699	26,372,028	64,118,058	1,789,755,321
Total Cost	19	270	2,151	3,289	10,502	14,727	23,249	59,972	138,113	324,903	774,625	1,861,942	4,496,671	10,891,344	26,428,495	64,202,759	1,790,184,117
NET INCOME	-19	-270	-2,151	-2,810	-8,218	-6,176	-10,103	-40,140	-108,553	-281,188	-710,315	-1,767,666	-4,358,795	-10,690,029	-26,134,877	-63,774,841	-1,788,260,883
CASH FLOW																	
SOURCES OF FUNDS***																	
Net Income	-19	-270	-2,151	-2,810	-8,218	-6,176	-10,103	-40,140	-108,553	-281,188	-710,315	-1,767,666	-4,358,795	-10,690,029	-26,134,877	-63,774,841	-1,788,260,883
Equity	19	191															
Government Contribution																	
Loan Receipt																	
1) CFN (Foreign Portion)	0	619	1,929	380	1,359												
2) Commercial (Local Portion)	0	551	2,583	1,252	8,027												
3) CFN (Working Capital)	0	584	5,468	13,178	46,448	99,212	205,656	473,038	1,136,718	2,754,378	6,666,742	16,165,430	39,235,831	95,333,366	231,759,865	563,666,666	19,525,214,632
Sub-total	0	1,754	9,980	14,810	55,833	99,212	205,656	473,038	1,136,718	2,754,378	6,666,742	16,165,430	39,235,831	95,333,366	231,759,865	563,666,666	19,525,214,632
Total Sources	0	1,675	7,829	12,000	47,615	93,036	195,553	432,898	1,028,165	2,473,190	5,956,427	14,397,764	34,877,036	84,643,337	205,624,988	499,891,826	17,736,953,749
USES OF FUNDS																	
Project Investment	0	1,124	4,375	1,425	9,071												
Loan Repayment																	
1) CFN (Foreign Portion)	0	0	0	0	0	577	3,057	4,888	8,717	12,794	18,778	21,796	10,095	10,506	0		
2) Commercial (Local Portion)	0	551	2,583	1,252	8,027	0											
3) CFN (Working Capital)	0	0	872	9,323	30,518	92,459	192,516	428,010	1,019,448	2,460,396	5,937,649	14,375,969	34,866,941	84,632,831	205,624,988	499,891,826	17,736,953,749
Sub-total	0	551	3,454	10,575	38,545	93,036	195,553	432,898	1,028,165	2,473,190	5,956,427	14,397,764	34,877,036	84,643,337	205,624,988	499,891,826	17,736,953,749
Total Uses	0	1,675	7,829	12,000	47,615	93,036	195,553	432,898	1,028,165	2,473,190	5,956,427	14,397,764	34,877,036	84,643,337	205,624,988	499,891,826	17,736,953,749
SURPLUS (DEFICIT)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE SURPLUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Remarks:

* Alternative 3: CFN (Foreign portion), commercial loan (Local portion), CFN (Working Capital), equity without CFN

** ZOFREE exempt from tax. Depreciation is excluded.

*** Depreciation is excluded.

Table M - 24 LOAN REPAYMENT FOR LOCAL LOAN†

(\$ million)

NO. Year	LOCAL CUMULATIVE		REPAYMENT (First Year)		CUMULATIVE		REPAYMENT (Second Year)	
	LOAN	DEBT	Interest	Principal	Total	DEBT	Interest	Principal
1 1992	551		551	137	551	688		
2 1993	2,583		0				2,583	1,446
3 1994	1,252						0	
4 1995	8,027							
5 1996								
6 1997								
7 1998								
8 1999								
9 2000								
10 2001								
11 2002								
12 2003								
13 2004								
14 2005								
Total	12,412		0	0	0	0	1,446	2,583

NO. Year	CUMULATIVE		REPAYMENT (Third Year)		CUMULATIVE		REPAYMENT (Fourth Year)		REPAYMENT (Total)	
	DEBT	Interest	Principal	Total	DEBT	Interest	Principal	Total	Interest	Principal
1 1992									137	551
2 1993									1,446	2,583
3 1994	1,252	701	1,252	1,953					701	1,252
4 1995	0				8,027	4,495	8,027	12,522	4,495	8,027
5 1996					0	0			0	0
6 1997										
7 1998										
8 1999										
9 2000										
10 2001										
11 2002										
12 2003										
13 2004										
14 2005										
Total	701	1,252	1,953		4,495	8,027	12,522	6,779	12,412	19,191

Remarks: † Excluding the local portion of promotion cost

Finance source is assumed to be commercial banks (Interest rate : 5.6%, Repayment period (Grace period): 1 (0) year)

Table M-25 LOAN REPAYMENT FOR WORKING CAPITAL (1/4)*

NO. Year	THIRTIETH YEAR (1987-1988)				THIRTIETH YEAR (1987-1988)				THIRTIETH YEAR (1987-1988)				THIRTIETH YEAR (1987-1988)			
	CLMULASTDPRF	Interest	Principal	Total	CLMULASTDPRF	Interest	Principal	Total	CLMULASTDPRF	Interest	Principal	Total	CLMULASTDPRF	Interest	Principal	Total
1.5 1987 (1st Half)	0	518	346	0	0	0	0	0	0	0	0	0	0	0	0	0
2 1987 (2nd Half)	430	273	858	172	34	296	340	0	5128	5128	0	0	0	0	0	0
3 1987 (3rd Half)	1128	287	839	120	31	194	198	0	3282	3282	0	0	0	0	0	0
4 1987 (4th Half)	9287	198	618	0	54	618	85	21	3282	3282	0	0	0	0	0	0
5 1987 (1st Half)	16285	0	0	0	114	381	0	21	3282	3282	0	0	0	0	0	0
6 1987 (2nd Half)	32152	0	0	0	0	0	0	0	3282	3282	0	0	0	0	0	0
7 1987 (3rd Half)	48079	0	0	0	0	0	0	0	6564	6564	0	0	0	0	0	0
8 1987 (4th Half)	64006	0	0	0	0	0	0	0	9846	9846	0	0	0	0	0	0
9 1987 (1st Half)	80013	0	0	0	0	0	0	0	13128	13128	0	0	0	0	0	0
10 1987 (2nd Half)	96020	0	0	0	0	0	0	0	16410	16410	0	0	0	0	0	0
11 1987 (3rd Half)	112027	0	0	0	0	0	0	0	19692	19692	0	0	0	0	0	0
12 1987 (4th Half)	128034	0	0	0	0	0	0	0	22974	22974	0	0	0	0	0	0
13 1987 (1st Half)	144041	0	0	0	0	0	0	0	26256	26256	0	0	0	0	0	0
14 1987 (2nd Half)	160048	0	0	0	0	0	0	0	29538	29538	0	0	0	0	0	0
15 1987 (3rd Half)	176055	0	0	0	0	0	0	0	32820	32820	0	0	0	0	0	0
16 1987 (4th Half)	192062	0	0	0	0	0	0	0	36102	36102	0	0	0	0	0	0
17 1987 (1st Half)	208069	0	0	0	0	0	0	0	39384	39384	0	0	0	0	0	0
18 1987 (2nd Half)	224076	0	0	0	0	0	0	0	42666	42666	0	0	0	0	0	0
19 1987 (3rd Half)	240083	0	0	0	0	0	0	0	45948	45948	0	0	0	0	0	0
20 1987 (4th Half)	256090	0	0	0	0	0	0	0	49230	49230	0	0	0	0	0	0
21 1987 (1st Half)	272097	0	0	0	0	0	0	0	52512	52512	0	0	0	0	0	0
22 1987 (2nd Half)	288104	0	0	0	0	0	0	0	55794	55794	0	0	0	0	0	0
23 1987 (3rd Half)	304111	0	0	0	0	0	0	0	59076	59076	0	0	0	0	0	0
24 1987 (4th Half)	320118	0	0	0	0	0	0	0	62358	62358	0	0	0	0	0	0
25 2011 (1st Half)	336125	0	0	0	0	0	0	0	65640	65640	0	0	0	0	0	0
26 2011 (2nd Half)	352132	0	0	0	0	0	0	0	68922	68922	0	0	0	0	0	0
Total	33,580,580.93	1,921.00	145.00	3,321.00	1,407.00	368.00	85.00	278.00	11,997.00	11,997.00	0.00	0.00	0.00	0.00	0.00	0.00

NO. Year	THIRTIETH YEAR (1987-1988)				THIRTIETH YEAR (1987-1988)				THIRTIETH YEAR (1987-1988)				THIRTIETH YEAR (1987-1988)			
	CLMULASTDPRF	Interest	Principal	Total	CLMULASTDPRF	Interest	Principal	Total	CLMULASTDPRF	Interest	Principal	Total	CLMULASTDPRF	Interest	Principal	Total
1 1992 (1st Half)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 1992 (2nd Half)	1,989,010	3,818,181	3,974,374	7,792,565	2,984,279	2,984,279	2,984,279	5,968,558	0	0	0	0	0	0	0	0
3 1992 (3rd Half)	1,546,258	3,091,895	3,138,895	6,280,190	2,381,234	2,381,234	2,381,234	4,762,468	0	0	0	0	0	0	0	0
4 1992 (4th Half)	1,103,506	2,318,895	2,365,895	4,684,790	1,776,193	1,776,193	1,776,193	3,552,386	0	0	0	0	0	0	0	0
5 1992 (1st Half)	802,629	1,713,895	1,760,895	3,474,524	1,280,145	1,280,145	1,280,145	2,560,290	0	0	0	0	0	0	0	0
6 1992 (2nd Half)	597,742	1,262,895	1,310,895	2,573,637	944,107	944,107	944,107	1,888,214	0	0	0	0	0	0	0	0
7 1992 (3rd Half)	438,855	917,895	965,895	1,883,750	693,060	693,060	693,060	1,386,120	0	0	0	0	0	0	0	0
8 1992 (4th Half)	322,168	672,895	710,895	1,385,063	511,595	511,595	511,595	1,023,190	0	0	0	0	0	0	0	0
9 2000 (1st Half)	237,281	474,895	498,895	973,176	381,118	381,118	381,118	762,236	0	0	0	0	0	0	0	0
10 2000 (2nd Half)	175,411	350,895	368,895	726,306	285,838	285,838	285,838	571,676	0	0	0	0	0	0	0	0
11 2000 (3rd Half)	131,558	263,895	277,895	541,453	214,378	214,378	214,378	428,756	0	0	0	0	0	0	0	0
12 2000 (4th Half)	97,468	192,895	202,895	397,363	160,783	160,783	160,783	321,566	0	0	0	0	0	0	0	0
13 2000 (1st Half)	72,801	144,895	152,895	297,696	120,587	120,587	120,587	241,174	0	0	0	0	0	0	0	0
14 2000 (2nd Half)	54,601	108,895	115,895	217,496	90,440	90,440	90,440	180,880	0	0	0	0	0	0	0	0
15 2000 (3rd Half)	41,251	82,895	88,895	163,146	67,830	67,830	67,830	135,660	0	0	0	0	0	0	0	0
16 2000 (4th Half)	30,938	62,895	68,895	123,833	50,872	50,872	50,872	101,744	0	0	0	0	0	0	0	0
17 2000 (1st Half)	23,203	46,895	50,895	97,098	38,154	38,154	38,154	76,308	0	0	0	0	0	0	0	0
18 2000 (2nd Half)	17,402	35,895	39,895	71,297	28,615	28,615	28,615	57,230	0	0	0	0	0	0	0	0
19 2000 (3rd Half)	13,051	26,895	29,895	53,746	21,461	21,461	21,461	42,922	0	0	0	0	0	0	0	0
20 2000 (4th Half)	9,788	20,895	23,895	40,691	16,096	16,096	16,096	32,192	0	0	0	0	0	0	0	0
21 2001 (1st Half)	7,341	15,895	17,895	31,236	12,072	12,072	12,072	24,144	0	0	0	0	0	0	0	0
22 2001 (2nd Half)	5,505	11,895	13,895	23,405	9,054	9,054	9,054	18,108	0	0	0	0	0	0	0	0
23 2001 (3rd Half)	4,129	8,895	10,895	17,029	6,790	6,790	6,790	13,580	0	0	0	0	0	0	0	0
24 2001 (4th Half)	3,096	6,695	8,695	12,791	5,092	5,092	5,092	10,184	0	0	0	0	0	0	0	0
25 2011 (1st Half)	2,322	4,695	5,695	9,017	3,819	3,819	3,819	7,638	0	0	0	0	0	0	0	0
26 2011 (2nd Half)	1,741	3,520	4,261	6,761	2,864	2,864	2,864	5,728	0	0	0	0	0	0	0	0
Total	10,052,717	21,152,129	21,152,129	42,304,256	14,283,071	14,283,071	14,283,071	28,566,142	0	0	0	0	0	0	0	0

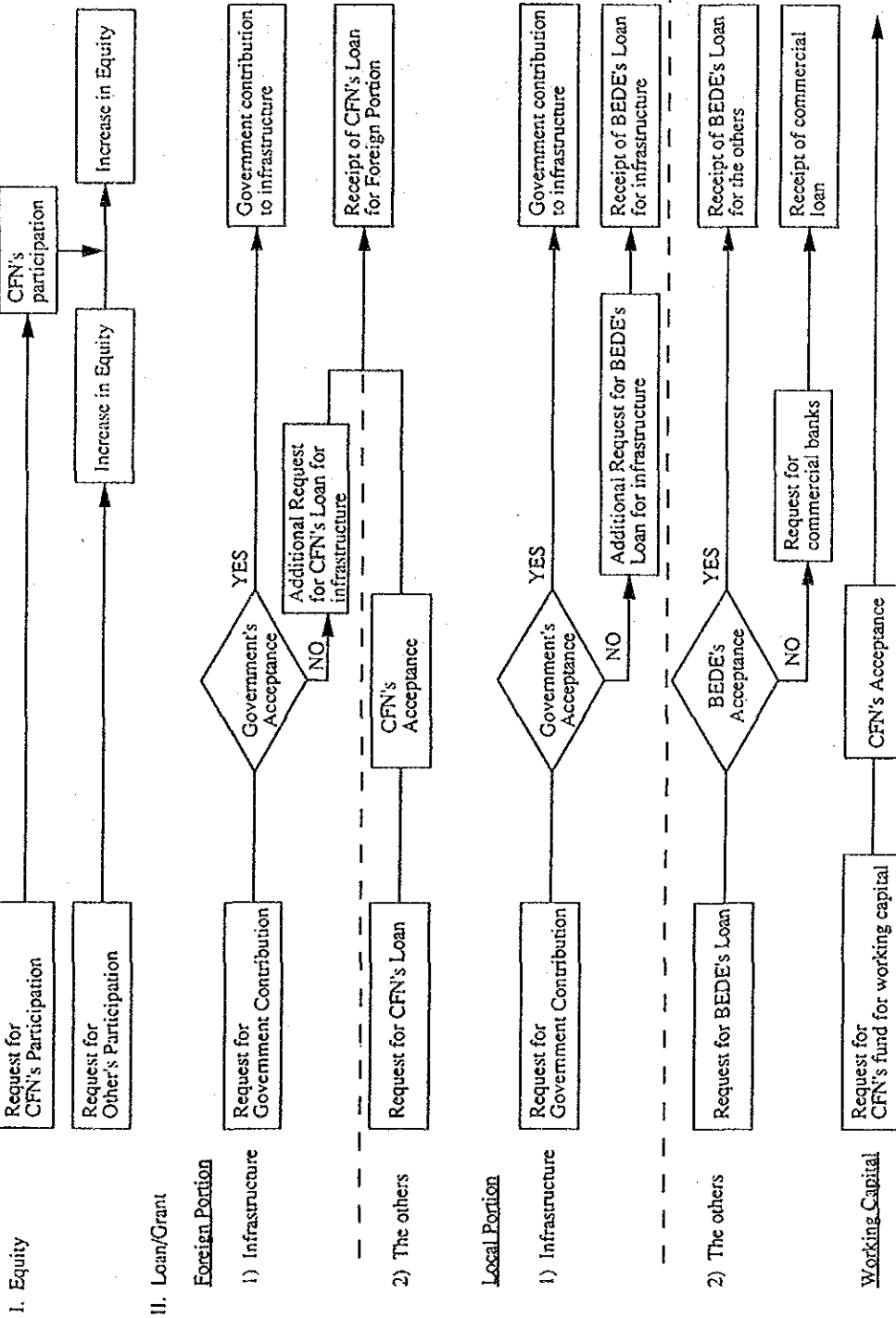
Remarques: * Fluxes (except for working capital) is assumed to be cash (Paid for Working Capital, Interest after 2000, Repayment period (Cash period) 2 (0.5) years). * Capitalized interest. ** Year of capitalized interest end the period.

Table M - 25 LOAN REPAYMENT FOR WORKING CAPITAL (2/4)*

No. Year	FOR MONTHLY YEAR (12 MONTHS)			FOR QUARTERLY YEAR (3 MONTHS)			FOR SEMI-ANNUAL YEAR (6 MONTHS)			FOR ANNUAL YEAR (12 MONTHS)		
	CUMULATIVE DEBT	REPAYMENT	REPAYMENT	CUMULATIVE DEBT	REPAYMENT	REPAYMENT	CUMULATIVE DEBT	REPAYMENT	REPAYMENT	CUMULATIVE DEBT	REPAYMENT	REPAYMENT
	At...	At...	At...	At...	At...	At...	At...	At...	At...	At...	At...	At...
15 1987 (1st Half)	0	14,206	14,206	0	32,152	32,152	0	0	0	0	0	0
23 1988 (1st Half)	0	14,206	28,412	0	32,152	64,304	0	0	0	0	0	0
3 1989 (1st Half)	0	14,206	42,618	0	32,152	96,456	0	0	0	0	0	0
11 1990 (1st Half)	0	14,206	56,824	0	32,152	128,608	0	0	0	0	0	0
19 1991 (1st Half)	0	14,206	71,030	0	32,152	160,760	0	0	0	0	0	0
27 1992 (1st Half)	0	14,206	85,236	0	32,152	192,912	0	0	0	0	0	0
35 1993 (1st Half)	0	14,206	99,442	0	32,152	225,064	0	0	0	0	0	0
43 1994 (1st Half)	0	14,206	113,648	0	32,152	257,216	0	0	0	0	0	0
51 1995 (1st Half)	0	14,206	127,854	0	32,152	289,368	0	0	0	0	0	0
59 1996 (1st Half)	0	14,206	142,060	0	32,152	321,520	0	0	0	0	0	0
67 1997 (1st Half)	0	14,206	156,266	0	32,152	353,672	0	0	0	0	0	0
75 1998 (1st Half)	0	14,206	170,472	0	32,152	385,824	0	0	0	0	0	0
83 1999 (1st Half)	0	14,206	184,678	0	32,152	417,976	0	0	0	0	0	0
91 2000 (1st Half)	0	14,206	198,884	0	32,152	450,128	0	0	0	0	0	0
99 2001 (1st Half)	0	14,206	213,090	0	32,152	482,280	0	0	0	0	0	0
107 2002 (1st Half)	0	14,206	227,296	0	32,152	514,432	0	0	0	0	0	0
115 2003 (1st Half)	0	14,206	241,502	0	32,152	546,584	0	0	0	0	0	0
123 2004 (1st Half)	0	14,206	255,708	0	32,152	578,736	0	0	0	0	0	0
131 2005 (1st Half)	0	14,206	269,914	0	32,152	610,888	0	0	0	0	0	0
139 2006 (1st Half)	0	14,206	284,120	0	32,152	643,040	0	0	0	0	0	0
147 2007 (1st Half)	0	14,206	298,326	0	32,152	675,192	0	0	0	0	0	0
155 2008 (1st Half)	0	14,206	312,532	0	32,152	707,344	0	0	0	0	0	0
163 2009 (1st Half)	0	14,206	326,738	0	32,152	739,496	0	0	0	0	0	0
171 2010 (1st Half)	0	14,206	340,944	0	32,152	771,648	0	0	0	0	0	0
179 2011 (1st Half)	0	14,206	355,150	0	32,152	803,800	0	0	0	0	0	0
187 2012 (1st Half)	0	14,206	369,356	0	32,152	835,952	0	0	0	0	0	0
195 2013 (1st Half)	0	14,206	383,562	0	32,152	868,104	0	0	0	0	0	0
203 2014 (1st Half)	0	14,206	397,768	0	32,152	900,256	0	0	0	0	0	0
211 2015 (1st Half)	0	14,206	411,974	0	32,152	932,408	0	0	0	0	0	0
219 2016 (1st Half)	0	14,206	426,180	0	32,152	964,560	0	0	0	0	0	0
227 2017 (1st Half)	0	14,206	440,386	0	32,152	996,712	0	0	0	0	0	0
235 2018 (1st Half)	0	14,206	454,592	0	32,152	1,028,864	0	0	0	0	0	0
243 2019 (1st Half)	0	14,206	468,798	0	32,152	1,061,016	0	0	0	0	0	0
251 2020 (1st Half)	0	14,206	483,004	0	32,152	1,093,168	0	0	0	0	0	0
259 2021 (1st Half)	0	14,206	497,210	0	32,152	1,125,320	0	0	0	0	0	0
267 2022 (1st Half)	0	14,206	511,416	0	32,152	1,157,472	0	0	0	0	0	0
275 2023 (1st Half)	0	14,206	525,622	0	32,152	1,189,624	0	0	0	0	0	0
283 2024 (1st Half)	0	14,206	539,828	0	32,152	1,221,776	0	0	0	0	0	0
291 2025 (1st Half)	0	14,206	554,034	0	32,152	1,253,928	0	0	0	0	0	0
299 2026 (1st Half)	0	14,206	568,240	0	32,152	1,286,080	0	0	0	0	0	0
307 2027 (1st Half)	0	14,206	582,446	0	32,152	1,318,232	0	0	0	0	0	0
315 2028 (1st Half)	0	14,206	596,652	0	32,152	1,350,384	0	0	0	0	0	0
323 2029 (1st Half)	0	14,206	610,858	0	32,152	1,382,536	0	0	0	0	0	0
331 2030 (1st Half)	0	14,206	625,064	0	32,152	1,414,688	0	0	0	0	0	0
339 2031 (1st Half)	0	14,206	639,270	0	32,152	1,446,840	0	0	0	0	0	0
347 2032 (1st Half)	0	14,206	653,476	0	32,152	1,478,992	0	0	0	0	0	0
355 2033 (1st Half)	0	14,206	667,682	0	32,152	1,511,144	0	0	0	0	0	0
363 2034 (1st Half)	0	14,206	681,888	0	32,152	1,543,296	0	0	0	0	0	0
371 2035 (1st Half)	0	14,206	696,094	0	32,152	1,575,448	0	0	0	0	0	0
379 2036 (1st Half)	0	14,206	710,300	0	32,152	1,607,600	0	0	0	0	0	0
387 2037 (1st Half)	0	14,206	724,506	0	32,152	1,639,752	0	0	0	0	0	0
395 2038 (1st Half)	0	14,206	738,712	0	32,152	1,671,904	0	0	0	0	0	0
403 2039 (1st Half)	0	14,206	752,918	0	32,152	1,704,056	0	0	0	0	0	0
411 2040 (1st Half)	0	14,206	767,124	0	32,152	1,736,208	0	0	0	0	0	0
419 2041 (1st Half)	0	14,206	781,330	0	32,152	1,768,360	0	0	0	0	0	0
427 2042 (1st Half)	0	14,206	795,536	0	32,152	1,800,512	0	0	0	0	0	0
435 2043 (1st Half)	0	14,206	809,742	0	32,152	1,832,664	0	0	0	0	0	0
443 2044 (1st Half)	0	14,206	823,948	0	32,152	1,864,816	0	0	0	0	0	0
451 2045 (1st Half)	0	14,206	838,154	0	32,152	1,896,968	0	0	0	0	0	0
459 2046 (1st Half)	0	14,206	852,360	0	32,152	1,929,120	0	0	0	0	0	0
467 2047 (1st Half)	0	14,206	866,566	0	32,152	1,961,272	0	0	0	0	0	0
475 2048 (1st Half)	0	14,206	880,772	0	32,152	1,993,424	0	0	0	0	0	0
483 2049 (1st Half)	0	14,206	894,978	0	32,152	2,025,576	0	0	0	0	0	0
491 2050 (1st Half)	0	14,206	909,184	0	32,152	2,057,728	0	0	0	0	0	0
499 2051 (1st Half)	0	14,206	923,390	0	32,152	2,089,880	0	0	0	0	0	0
507 2052 (1st Half)	0	14,206	937,596	0	32,152	2,122,032	0	0	0	0	0	0
515 2053 (1st Half)	0	14,206	951,802	0	32,152	2,154,184	0	0	0	0	0	0
523 2054 (1st Half)	0	14,206	966,008	0	32,152	2,186,336	0	0	0	0	0	0
531 2055 (1st Half)	0	14,206	980,214	0	32,152	2,218,488	0	0	0	0	0	0
539 2056 (1st Half)	0	14,206	994,420	0	32,152	2,250,640	0	0	0	0	0	0
547 2057 (1st Half)	0	14,206	1,008,626	0	32,152	2,282,792	0	0	0	0	0	0
555 2058 (1st Half)	0	14,206	1,022,832	0	32,152	2,314,944	0	0	0	0	0	0
563 2059 (1st Half)	0	14,206	1,037,038	0	32,152	2,347,096	0	0	0	0	0	0
571 2060 (1st Half)	0	14,206	1,051,244	0	32,152	2,379,248	0	0	0	0	0	0
579 2061 (1st Half)	0	14,206	1,065,450	0	32,152	2,411,400	0	0	0	0	0	0
587 2062 (1st Half)	0	14,206	1,079,656	0	32,152	2,443,552	0	0	0	0	0	0
595 2063 (1st Half)	0	14,206	1,093,862	0	32,152	2,475,704	0	0	0	0	0	0
603 2064 (1st Half)	0	14,206	1,108,068	0	32,152	2,507,856	0	0	0	0	0	0
611 2065 (1st Half)	0	14,206	1,122,274	0	32,152	2,540,008	0	0	0	0	0	0
619 2066 (1st Half)	0	14,206	1,136,480	0	32,152	2,572,160	0	0	0	0	0	0
627 2067 (1st Half)	0	14,206	1,150,686	0	32,152	2,604,312	0	0	0	0	0	0
635 2068 (1st Half)	0	14,206	1,164,892	0	32,152	2,636,464	0	0	0	0	0	0
643 2069 (1st Half)	0	14,206	1,179,098	0	32,152	2,668,616	0	0	0	0	0	0
651 2070 (1st Half)	0	14,206	1,193,304	0	32,152	2,700,768	0	0	0	0	0	0
659 2071 (1st Half)	0	14,206	1,207,510	0	32,152	2,732,920	0	0	0	0	0	0
667 2072 (1st Half)	0	14,206	1,221,716	0	32,152	2,765,072	0	0	0	0	0	0
675 2073 (1st Half)	0	14,206	1,235,922	0	32,152	2,797,224	0	0	0	0	0	0
683 2074 (1st Half)	0	14,206	1,250,128	0	32,152	2,829,376	0	0	0	0	0	0
691 2075 (1st Half)	0	14,206	1,264,334	0	32,152	2,861,528	0	0	0	0	0	0
699 2076 (1st Half)	0	14,206	1,278,540	0	32,152	2,893,680	0	0	0	0	0	0
707 2077 (1st Half)	0	14,206	1,									

Mid. - 1992

Beg. - 1992



JAPAN INTERNATIONAL COOPERATION AGENCY ESMERALDAS EXPORT PROCESSING ZONE DEVELOPMENT PROJECT Fig. M - 1 A Conceptual Flow for Finance Arrangement

ANNEX N

ECONOMIC ANALYSIS

ANNEX - N

ECONOMIC ANALYSIS

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N.1 METHOD OF EVALUATION

N.1.1 Enclave Approach

Economic analysis of the Esmeraldas EPZ Project will be made by employing the method called "enclave approach". This method has been applied to analyses on several export processing zones (EPZs) operated in Asia. To apply the method to the analysis on the Project, it is necessary to forecast economic activities of expected users in the Esmeraldas EPZ, based on some assumptions and situations specific to the Project. It is noted, however, that some factors will remain unquantifiable in the analysis.

In the enclave approach, an EPZ is treated as an enclave in the country. Unlike ordinary projects, transactions between EPZ as an enclave and the rest of the country are considered instead of these between EPZ and overseas markets. In other words, net gain to the country obtained through the transactions between enclave and the country is counted as economic benefits for the country which are attributable to the Project. Enclave approach for an EPZ project may be easily understood when all the investors in the EPZ are foreign-owned enterprises.

N.1.2 Benefits Addressed by Enclave Approach

Major benefits of the EPZ to accrue for the country are, in general, employment generation, foreign exchange earnings and transfer of technology. By employing the enclave approach, these benefits will be preliminarily examined, in the light of the specific characteristics of the Esmeraldas EPZ, in the following manner:

a) Employment generation (Wage earning)

The gains to Ecuadorian economy due to the generation of employment opportunities is the total payment of wages by foreign firms to workers minus the social opportunity cost of employing these workers, considering that the workers would have gained some wages without the Project.

b) Payment for user charges

The revenues that ZOFREE will receive from foreign firms are economic benefit for the Ecuadorian economy. They will comprise revenues of land lease and floor rental of the standard factories, as well as commercial and other service charges.

c) Profit Sharing to Employees in the EPZ

According to the Law of Free Zones, free zone employees in the EPZ are entitled to profit sharing as provided for under the Labor Code. The proportion of profit sharing is prescribed to be "15% of the liquid profits" in the Code. Thus, the gain to Ecuadorian economy is the partial transfer of foreign firms' profit to the workers.

d) Transfer of Technology

Transfer of technology is considered to be an important effect to be brought about by foreign firms. The technology includes the one related to production, quality control, management of labor, production control, marketing and business management. It would be difficult, however, to quantify this benefit.

e) Payment to Government of Ecuador

The taxes to be paid by firms in the EPZ represent a source of economic benefit to the domestic economy. In the case of the Esmeraldas EPZ, no tax will be imposed on the users under the Law of Free Zones. However, firms in the EPZ shall pay to CONAZOFRA "two percent of total value of the foreign currency that the users require for their operation, administration, service, wage and salary expenses, except for expenses for purchase of machinery, raw materials or inputs (input factors, feedstock)" under the Law.

f) Domestic Inputs

In the economy with minimum wage laws and trade distortions, market value of final output is considered to exceed its social opportunity cost. Gain to the local economy is the difference between domestic price and c.i.f. import price if the former is protected by tariff. On the other hand, cost would be incurred to the domestic economy if the Government gives subsidies to domestic market price.

g) Increase in Production Value in the Port

Esmeraldas Port near the EPZ will be increasingly utilized owing to the EPZ users' transaction of imports and exports. Gains to the national economy will be net incremental production value owing to the existence of the EPZ.

h) Net Foreign Exchange Earnings

The foreign firms located in the EPZ must convert their foreign exchange at the official exchange rate into Sucre enough to meet their domestic wage bills and to purchase locally produced materials and goods. At present, official exchange rate is considered as exceeding the economic (shadow) exchange rate by about 5%. Balance of foreign exchange earnings evaluated at official and shadow exchange rates can be considered as economic benefit to the country.

All the benefits above will have to be quantified theoretically in the economic analysis. Practically, however, only benefits of employment generation and payment for user changes can be measured in this study, because production programs and volumes in the EPZ are unknown yet and the firms' future investments without the project condition are unpredictable.

N.2 ESTIMATED BENEFITS

Economic benefit of the Project has been estimated by means of the enclave approach, comprising revenues to ZOFREE and wages paid to workers by foreign firms in the Esmeraldas EPZ. According to the demand survey of this study, five foreign firms have been identified as likely investors to locate their factories in the Esmeraldas EPZ. However, the number of likely firms would be increased if comprehensive demand survey is conducted instead of sample survey. Overall number of the foreign firms likely to be located in the Esmeraldas EPZ ranges 20 to 25 as noted in Annex B. Accordingly, economic analysis is made under the following three cases:

- Case 1 : 5 foreign firms will be located in the EPZ
- Case 2 : 10 foreign firms will be located in the EPZ
- Case 3 : 20 foreign firms will be located in the EPZ

As for the Cases 2 and 3, types of industry, number of employees and floor-lot area, are assumed to increase in proportion to the number of firms.

N.2.1 Employment Generation

The benefit of employment generation is the difference between wages, salaries and others payment to Ecuadorian workers and their opportunity cost. The workers' opportunity cost is equivalent to their shadow wage rate: 45% of wage rates for unskilled labor, as estimated by the Development Bank of Ecuador (BEDE).

According to the Law of Free Zone, the wages of workers hired by the users in the EPZ "must be at least 10% higher than the minimum wages received by workers of the same sector in Ecuador" (Article 53). Also, the contract of wages will be agreed between the firms and the workers in US dollars.

Minimum monthly wage of small industry workers stipulated in Labor Code is S/. 40,000, as of January 1, 1991. However, workers and owners agreed with minimum monthly wage on an industrial sub-sector basis. The latter is applied in this analysis.

The table below shows the projection of operation schedule of prospective foreign firms in Case 2.

Industrial category	Lot area* (ha)	Floor area (Standard factory) * (ha)	No. of * Employee	Minimum ** wage (S/. / month)	Wage **** to be paid (S/. / month)	Commencement of operation
1. Apparel (Sport Wear)	-	0.42	300	55,000	60,500	1996
2. Apparel (Underwear)	-	0.84	600	55,000	60,500	1996
3. Apparel (Sleepwear)	-	0.84	600	55,000	60,500	1996
4. Furniture (Rattan)	-	0.42	300	60,000	66,000	1996
5. Wire harnesses	1.2	-	200	40,000***	44,000	1996

Remarks: * Refer to Table L-2 in Annex L

** Result of JICA study team's interview survey. Social benefits are excluded from the figures.

*** As minimum wage of wire harness industry was not available, the minimum wage stipulated in the Labor Code was applied.

**** Increase in the minimum wage in each industry by 10%.

On the basis of the above table, annual benefits of employment generation to be raised by the Project have been estimated as shown in Table N-3. Annual benefit is estimated to be US\$1,261,565 per year.

N.2.2 Revenue from Foreign Firms in the EPZ

Revenues from foreign firms for land lease and floor rental are economic benefits of the Project since they will be a gain to the Ecuadorian economy. The unit price of each revenue source set in Section M.2.2 of Annex M can be taken as economic prices because the price was set as competitive with that of EPZs in neighboring countries. The unit prices are US\$2.5/m² and US\$0.5/m² for floor rental of standard factories and land lease, respectively.

Table N-4, which is prepared on the basis of the projected operation schedule, shows the projection of revenue from the foreign firms in the Esmeraldas EPZ (Case 2). Annual benefits will amount to US\$828,000.

Tables N-1 through N-6 present the economic benefits of the Project in Case 1 through 3.

N.3 COSTS

N.3.1 Associated Costs

In the financial analysis (Annex M), the costs to be incurred for ZOFREE (internal cost) were taken into account. In the economic analysis, however, all the costs associated with the implementation of the Project should be included in economic costs since economic analysis is made from the national economic point of view.

Associated (external) costs of the Project comprise the cost of power supply, telecommunication and water supply, as well as road to port. Out of these costs, the costs for water supply and road are included in Table M-1. Initial costs for power supply and telecommunication are estimated only for the purpose of economic analysis, as shown in Table N-7. These costs are assumed to be disbursed in 1993. O&M costs for power supply and telecommunication are estimated to be US\$30,000 per year at June 1991 prices.

N.3.2 Conversion to Economic Cost

Financial costs of the Project have to be converted into economic costs. First, the financial costs should be adjusted by internal transfer payment such as taxes and subsidies in Ecuador. In this analysis, 10% of net transfer is assumed to be included and deducted from the financial costs.

Then, foreign exchange premium is taken into account, in order to derive economic costs. Shadow exchange rate of Sucre against US dollar is estimated at 1.05 times as much as official exchange rate, as estimated by BEDE.

Table N-8 shows the disbursement schedule of the economic costs of the Project. The economic cost of water supply is included in the construction cost, while costs of power supply and telecommunication are added as associated costs. Total initial cost is estimated to be US\$6.9 million, while total O&M is estimated to be US\$212,000 in full operation, at June 1991 prices.

N.4 ECONOMIC VIABILITY

N.4.1 EIRR

Economic benefit and cost streams of the Project are projected as shown in Table N-9 through Table N-11 for Case 1, Case 2 and Case 3, respectively. The EIRR in each case is calculated as follows:

Cases	EIRR (%)
Case 1 (5 foreign firms)	6.1
Case 2 (10 foreign firms)	18.1
Case 3 (20 foreign firms)	33.4

Opportunity cost of capital being 12% in Ecuador, the Project is quite viable under Case 2 and Case 3. Though EIRR is rather low under Case 1. The Project may be considered justifiable, if the sizable amount of benefits which are not counted in this analysis are taken into account.

N.4.2 Sensitivity Analysis

Sensitivity of EIRR has been analyzed only for the Case 2 under such conditions that revenues and costs are changed as follows:

Revenue

Four out of 5 foreign firms would be renting standard factory in the Esmeraldas EPZ. The amount of revenue is therefore, quite sensitive to the change of the level of factory rent. Thus, the cases are:

Benefit

- Case (a) : Decline in unit price of floor rental of standard factory to US\$2.0/m² from US\$2.5/m²
- Case (b) : Delay in revenue by one year (Delay of users' investment)
- Case (c) : Increase in revenue by 10%

Cost

- Case A : Increase in cost by 10%
- Case B : Increase in cost by 20%
- Case C : Decrease in cost by 10%

Result

The result of sensitivity analysis is summarized below.

Benefit	Cost	Base Case	Case A	Case B	Case C
Base case		18.1	16.3	14.7	20.2
Case (a)		16.7	14.9	13.4	18.7
Case (b)		15.1	13.6	12.2	16.8
Case (c)		20.0	18.1	16.5	22.1

Changes in EIRR under the above condition would not threaten the economic viability of the Project, exceeding 12% in all the cases.

N.5 SOCIO-ECONOMIC IMPACTS

Through the implementation of the Project, positive socio-economic impacts can be expected either directly or indirectly.

Direct impact can be considered as the employment opportunities to be provided within the Esmeraldas EPZ. It is estimated that about 2,450 workers will be employed in the factories located in the EPZ. In addition, 130 employees will be hired for the administration of ZOFREE and for the operation of the commercial facilities in the EPZ, totalling 2,580.

Total value-added to be generated by industries in the Esmeraldas EPZ has been estimated on the basis of available data on gross production per employee and value-added ratio (ratio of value-added to gross production) by category of industries in 1988. In full operation, the industries would annually generate value-added of S/. 2,981 million at 1988 prices as shown in Table N-12.

To handle the increased cargoes and shipping operation, administrative staff of the Esmeraldas Port Authority should be reinforced and more workers should be hired. Through the purchase of raw materials and intermediate goods from in and around Esmeraldas, manufacturing industries and primary sector as well as transport sector will be activated. In order to support the lives of these additional employees within and outside the EPZ, commercial and other services must be provided.

All these would bring about positive socio-economic impact on the society, although they are not quantified in this analysis.

Table N - 1 ECONOMIC BENEFIT OF EMOLYMENT GENERATION WITH REGARD TO FOREIGN FIRMS IN THE EEPZ (Case 1)

Industrial Category	[1] Minimum Salary per Worker (\$/ per month)	[2] * Total Salary including Social Benefits (\$/ per month)	[3] Salary to be Paid to Workers in EPZ ([1] x 1.1) (\$/ per month)	[4] * Total Salary including Social Benefits in EPZ (\$/ per month)	[5] Shadow Wage Rate ([1] x 0.45) (\$/ per month)	[6] * Total Salary based on Shadow Wage Rate (\$/ per month)	[7] Incremental Benefit per Worker ([4] - [6]) (\$/ per month)	[8] No. of Employee	[9] Benefit ([7] x [8]) (\$/ per month)	[10]** Annual Benefit (US\$ per year)
1. Wearing Apparel										
Apparel (Sports Wear)	55,000	99,000	60,500	108,900	24,750	44,350	64,350	150	9,652,500	95,925
Apparel (Underwear)	55,000	99,000	60,500	108,900	24,750	44,350	64,350	300	19,305,000	191,851
Apparel (Sleep Wear)	55,000	99,000	60,500	108,900	24,750	44,350	64,350	300	19,305,000	191,851
2. Furniture										
Furniture (Rattan)	60,000	108,000	66,000	118,800	27,000	48,600	70,200	150	10,530,000	104,646
3. Transport Equipment										
Wire harnesses	40,000	72,000	44,000	79,200	18,000	32,400	46,800	100	4,680,000	46,509
Total								1,000	63,472,500	630,783

Remarks: * Total salary including social benefits is assumed to be 1.8 times as much as the basic salary.

** Exchange rate: 1 US\$ = S/. 1,150 X 1.05 = S/. 1,207.5 (Shadow Exchange Rate)

Sources: [1], [2] & [8] JICA study team, [3] Law of Free Zone, [5] Development Bank of Ecuador

Table N - 2 ECONOMIC BENEFIT OF REVENUE FROM FOREIGN FIRMS IN THE EEPZ (Case 1)

Industrial Category	Floor Area of Standard Factory (m ²)	Unit Price of Floor (Monthly) (US\$/m ² /month)	Lot Area (Monthly) (m ²)	Unit Price of Lot Area (US\$/m ² /month)	Annual Revenue (US\$/year)
1. Wearing Apparel					
Apparel (Sports Wear)	2,100	2.5	-	-	63,000
Apparel (Underwear)	4,200	2.5	-	-	126,000
Apparel (Sleep Wear)	4,200	2.5	-	-	126,000
2. Furniture					
Furniture (Rattan)	2,100	2.5	-	-	63,000
3. Transport Equipment					
Wire harnesses	-	-	6,000	0.5	36,000
Total					414,000

Table N - 3 ECONOMIC BENEFIT OF EMPLOYMENT GENERATION WITH REGARD TO FOREIGN FIRMS IN THE EEPZ (Case 2)

Industrial Category	[1] Minimum Salary per Worker (\$/ per month)	[2]* Total Salary including Social Benefits (\$/ per month)	[3] Salary to be Paid to Workers in EPZ ([1] x 1.1) (\$/ per month)	[4]* Total Salary including Social Benefits in EPZ (\$/ per month)	[5] Shadow Wage Rate ([1] x 0.45) (\$/ per month)	[6]* Total Salary based on Shadow Wage Rate (\$/ per month)	[7] Incremental Benefit per Worker/Employee ([4] - [6]) (\$/ per month)	[8] No. of Employee	[9] Benefit ([7] x [8]) (\$/ per month)	[10]** Annual Benefit (US\$/ per year)
1. Wearing Apparel										
Apparel	55,000	99,000	60,500	108,900	24,750	44,550	64,350	300	19,305,000	191,851
Apparel	55,000	99,000	60,500	108,900	24,750	44,550	64,350	600	38,610,000	383,702
Apparel	55,000	99,000	60,500	108,900	24,750	44,550	64,350	600	38,610,000	383,702
2. Furniture										
Furniture	60,000	108,000	66,000	118,800	27,000	48,600	70,200	300	21,060,000	209,292
3. Transport Equipment										
Wire harnesses	40,000	72,000	44,000	79,200	18,000	32,400	46,800	200	9,360,000	93,019
Total								2,000	126,945,000	1,261,565

Remarks: * Total salary including social benefits is assumed to be 1.8 times as much as the basic salary.

** Exchange rate: 1 US\$ = S/1,150 X 1.05 = S/1,207.5 (Shadow Exchange Rate)

Sources: [1], [2] & [8] JICA study team, [3] Law of Free Zone, [5] Development Bank of Ecuador

Table N - 4 ECONOMIC BENEFIT OF REVENUE FROM FOREIGN FIRMS IN THE EEPZ (Case 2)

Industrial Category	Floor Area of Standard Factory (m ²)	Unit Price of Floor (Monthly) (US\$/m ² /month)	Lot Area (Monthly) (m ²)	Unit Price of Lot Area (US\$/m ² /month)	Annual Revenue (US\$/year)
1. Wearing Apparel					
Apparel	4,200	2.5	-	-	126,000
Apparel	8,400	2.5	-	-	252,000
Apparel	8,400	2.5	-	-	252,000
2. Furniture					
Furniture	4,200	2.5	-	-	126,000
3. Transport Equipment					
Wire harnesses	-	-	12,000	0.5	72,000
Total					828,000

Table N - 5 ECONOMIC BENEFIT OF EMPLOYMENT GENERATION WITH REGARD TO FOREIGN FIRMS IN THE EEPZ (Case 3)

Industrial Category	[1] Minimum Salary per Worker (\$/ per month)	[2] * Total Salary including Social Benefits (1) x 1.1 (\$/ per month)	[3] Salary to be Paid to Workers in EPZ (1) x 1.1 (\$/ per month)	[4] * Total Salary including Social Benefits in EPZ (1) x 0.45 (\$/ per month)	[5] Shadow Wage (\$/ per month)	[6] * Total Salary based on Shadow Wage Rate (\$/ per month)	[7] Incremental Benefit per Worker (4) - (6) (\$/ per month)	[8] No. of Employee	[9] Benefit (7) x (8) (\$/ per month)	[10] ** Annual Benefit (\$/ per year)
1. Wearing Apparel										
Apparel	55,000	99,000	60,500	108,900	24,750	44,550	64,350	600	38,610,000	383,702
Apparel	55,000	99,000	60,500	108,900	24,750	44,550	64,350	1,200	77,220,000	767,404
Apparel	55,000	99,000	60,500	108,900	24,750	44,550	64,350	1,200	77,220,000	767,404
2. Furniture										
Furniture	60,000	108,000	66,000	118,800	27,000	48,600	70,200	600	42,120,000	418,584
3. Transport Equipment										
Wire harnesses	40,000	72,000	44,000	79,200	18,000	32,400	46,800	400	18,720,000	186,037
Total								4,000	253,890,000	2,523,130

Remarks: * Total salary including social benefits is assumed to be 1.8 times as much as the basic salary.

** Exchange rate: 1 US\$ = S/. 1.150 X 1.05 = S/. 1.207.5 (Shadow Exchange Rate)

Sources: [1], [2] & [8] JICA study team, [3] Law of Free Zone, [5] Development Bank of Ecuador

Table N - 6 ECONOMIC BENEFIT OF REVENUE FROM FOREIGN FIRMS IN THE EEPZ (Case 3)

Industrial Category	Floor Area of Standard Factory (m2)	Unit Price of Floor (Monthly) (US\$/m2/month)	Lot Area (Monthly) (m2)	Unit Price of Lot Area (US\$/m2/month)	Annual Revenue (US\$/year)
1. Wearing Apparel					
Apparel	8,400	2.5	-	-	252,000
Apparel	16,800	2.5	-	-	504,000
Apparel	16,800	2.5	-	-	504,000
2. Furniture					
Furniture	8,400	2.5	-	-	252,000
3. Transport Equipment					
Wire harnesses	-	-	24,000	0.5	144,000
Total					1,656,000

Table N - 7 COST ESTIMATE OF POWER SUPPLY AND TELECOMMUNICATION
(CIF Prices for Foreign Currency Portion)

(US\$ 1000)			
Cost Item	Foreign Currency	Local Currency	Total
I. POWER SYSTEM			
1. Sub-station			
1) Transformer (1 set)	200	0	200
2) Switchgear (2 sets)			
69kV CB (2 sets)	112	0	112
69kV DS (2 sets)	20	0	20
69kV CT (2 sets)	16	0	16
69kV PT (2 sets)	16	0	16
69kV LA (2 sets)	6	0	6
13.8kV CT (4 sets)	4	0	4
13.8kV Cubicle (10 sets)	350	0	350
13.8kV LA (8 sets)	12	0	12
Control Panel (2 sets)	60	0	60
Protection Panel (2 sets)	120	0	120
Charger (2 sets)	25	0	25
Sub-total	741	0	741
3) Ancillary Equipment			
Battery, 110V, 300AH (1 set)	25	0	25
Battery, 48V, 100AH(1 set)	10	0	10
Sub-total	35	0	35
4) Micellaneous Materials (Lot)	92	0	92
5) Intra-Erection	0	32	32
Total	1,068	32	1,100
2. Transmission Line, 5.5 km	220	55	275
3. Distribution Line, 3.5 km	34	8	42
4. Outdoor Lighting in EPZ	0	18	18
TOTAL	1,322	113	1,435
II. TELECOMMUNICATION SYSTEM			
1. Toll Line Cabling, 3km	15	15	30
2. Connection Cabinet	13	13	25
3. Telecom. Cabling	5	5	10
4. Miscellaneous Materials	3	3	5
5. Intra-Erection	0	10	10
TOTAL	35	45	80
GROUND TOTAL	1,357	158	1,515

Table N - 8 PROJECT COST (ECONOMIC COST) (US\$ 1000 in June, 1991 Prices)

Cost Items	1992		1993		1994		1995		Total	
	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
I. CONSTRUCTION COST										
1. Land Leveling	0	114	0	0	0	0	0	0	0	114
2. Infrastructure										
1) Road	0	0	0	93	0	0	0	0	0	93
2) Drainage	0	94	0	188	0	0	0	0	0	282
3) Water Supply	46	74	120	148	240	0	0	0	138	221
4) Sewerage	312	77	388	623	153	777	0	0	935	230
5) Solid Waste Disposal	0	0	0	188	188	0	0	0	188	188
6) Electric Facility	0	0	0	43	43	0	0	0	0	43
7) Telecommunication	0	0	0	0	0	0	0	0	0	0
Sub-total	358	244	602	715	813	1,529	0	0	1,073	1,058
3. Standard Factory	0	0	18	124	142	42	288	330	160	1,102
4. Administrative Facility	0	0	0	8	75	82	0	0	0	8
5. Service Facility	0	0	0	0	0	0	0	0	10	92
6. Park, Sports park	0	0	0	0	0	0	0	0	50	50
7. Others (Gate, Fence, Bus Terminal)	0	0	0	41	41	0	0	0	0	41
TOTAL	358	359	716	741	1,052	1,794	42	288	169	1,245
									1,310	2,944
										4,254
II. DESIGN & SUPERVISION COST	29	29	57	59	84	143	3	23	26	14
									100	113
									105	235
III. PROMOTION COST	29	19	49	59	39	98	59	39	98	59
									206	136
										342
IV. PHYSICAL CONTINGENCY	39	39	77	80	114	194	5	31	36	18
									134	153
									142	318
V. TOTAL	454	446	900	940	1,289	2,229	108	381	489	260
									1,517	1,778
									1,763	3,633
										5,396
VI. ASSOCIATED COST										
1. Power Supply				1,322	98	1,420				1,322
2. Telecommunication				35	39	74				35
Sub-total				1,357	137	1,494				1,357
										137
										1,494
VII. GROUND TOTAL	454	446	900	2,297	1,426	3,722	108	381	489	260
									1,517	1,778
									3,120	3,770
										6,890
O & M COST										
I. Remuneration										
1. Main Staff	0	14	14	17	17	0	36	36	0	55
2. Others (Guard, Driver etc.)	0	0	0	0	0	0	8	8	0	17
Sub-total	0	14	14	17	17	0	36	36	0	72
										72
										74
II. Direct cost of O & M										
1. Infrastructure	0	0	0	0	0	0	3	70	73	3
2. Standard Factory	0	0	0	0	0	0	2	3	1	8
3. Administrative facility	0	0	0	0	0	0	0	1	0	1
4. Service Building	0	0	0	0	0	0	0	0	0	0
5. Others	0	0	0	0	0	0	1	1	1	1
Sub-total	0	0	0	0	0	0	3	74	78	4
									80	84
									152	156
III. Total	0	14	14	17	17	0	36	36	0	26
									26	26
IV. Associated O & M	0	0	0	0	0	0	0	0	0	0
V. Ground Total	0	14	14	17	17	0	36	36	3	154
									178	182
									4	205
									7	212

Table N - 9 BENEFIT AND COST STREAM OF THE PROJECT
(Case 1)

(US\$ 1000 in June, 1991 prices)					
Year	COST			BENEFIT	NET BENEFIT (B - C)
	Initial Cost	OMR* Cost	Total		
1991	0	14	14	0	-14
1992	900	17	917	0	-917
1993	3,722	36	3,758	0	-3,758
1994	489	158	647	0	-647
1995	1,778	182	1,959	0	-1,959
1996		212	212	1,045	832
1997		212	212	1,045	832
1998		212	212	1,045	832
1999		212	212	1,045	832
2000		212	212	1,045	832
2001		212	212	1,045	832
2002		212	212	1,045	832
2003		212	212	1,045	832
2004		212	212	1,045	832
2005		212	212	1,045	832
2006		337	337	1,045	707
2007		212	212	1,045	832
2008		212	212	1,045	832
2009		212	212	1,045	832
2010		212	212	1,045	832
				EIRR =	6.1 %

Remark: O & M and Replacement costs

Table N - 10 BENEFIT AND COST STREAM OF THE PROJECT
(Case 2)

(US\$ 1000 in June, 1991 prices)						
Year	COST			BENEFIT	NET BENEFIT	
	Initial Cost	OMR* Cost	Total		(B - C)	
1991	0	14	14	0	-14	
1992	900	17	917	0	-917	
1993	3,722	36	3,758	0	-3,758	
1994	489	158	647	0	-647	
1995	1,778	182	1,959	0	-1,959	
1996		212	212	2,090	1,877	
1997		212	212	2,090	1,877	
1998		212	212	2,090	1,877	
1999		212	212	2,090	1,877	
2000		212	212	2,090	1,877	
2001		212	212	2,090	1,877	
2002		212	212	2,090	1,877	
2003		212	212	2,090	1,877	
2004		212	212	2,090	1,877	
2005		212	212	2,090	1,877	
2006		337	337	2,090	1,752	
2007		212	212	2,090	1,877	
2008		212	212	2,090	1,877	
2009		212	212	2,090	1,877	
2010		212	212	2,090	1,877	
EIRR =					18.1 %	

Remark: O & M and Replacement costs

Table N - 11 BENEFIT AND COST STREAM OF THE PROJECT
(Case 3)

(US\$ 1000 in June, 1991 prices)

Year	COST			BENEFIT	NET BENEFIT (B - C)
	Initial Cost	OMR* Cost	Total		
1991	0	14	14	0	-14
1992	900	17	917	0	-917
1993	3,722	36	3,758	0	-3,758
1994	489	158	647	0	-647
1995	1,778	182	1,959	0	-1,959
1996		212	212	4,179	3,967
1997		212	212	4,179	3,967
1998		212	212	4,179	3,967
1999		212	212	4,179	3,967
2000		212	212	4,179	3,967
2001		212	212	4,179	3,967
2002		212	212	4,179	3,967
2003		212	212	4,179	3,967
2004		212	212	4,179	3,967
2005		212	212	4,179	3,967
2006		337	337	4,179	3,842
2007		212	212	4,179	3,967
2008		212	212	4,179	3,967
2009		212	212	4,179	3,967
2010		212	212	4,179	3,967
				EIRR =	33.4 %

Remark: O & M and Replacement costs

Table N - 12 ESTIMATION OF VALUE-ADDED GAINED FROM FIRMS IN THE EPZ.

Industrial Category	Goods	[1]	[2]	[3]	[4]	[5]	[6]	[7]
		Gross Production per Employee* (\$/1000/employee 1988)	Adjustment by Scale of No. of Employee** (\$/1000/employee 1988)	Adjusted Gross Production per Employee (\$/1000/employee 1988)	No. of Employee	Gross Production (Market Price) (\$/million 1988)	Value-added Ratio	Value-added (\$/million 1988)
1. Food Manufacturing								
Sea food	Canned Shrimp	14,880	1.10	16,325	15	245	0.20	48
Sea food	Dry Small Shark's Wing	14,880	1.43	21,225	30	637	0.20	126
Vegetable	Unspecified	4,188	1.10	4,595	15	69	0.36	25
Animal food	Unspecified	25,487	1.29	32,762	60	1,966	0.14	265
Canned food	Canned Asparagus/Palmito	4,188	1.16	4,862	100	486	0.36	173
2. Wearing Apparel								
Apparel	Label	3,703	0.87	3,231	50	162	0.51	83
Apparel	Blanket	3,703	0.87	3,231	40	129	0.51	66
Apparel	Unspecified	2,450	0.78	1,913	40	77	0.35	27
Apparel	Unspecified	2,450	0.78	1,913	40	77	0.35	27
Apparel	Unspecified	2,450	0.78	1,913	40	77	0.35	27
Apparel	Unspecified	2,450	0.78	1,913	40	77	0.35	27
Apparel	Unspecified	2,450	1.05	2,577	150	387	0.35	137
Apparel	Unspecified	2,450	1.05	2,577	150	387	0.35	137
Apparel	Unspecified	2,450	1.05	2,577	140	361	0.35	128
Apparel	Sport wear	2,450	1.05	2,577	150	387	0.35	137
Apparel	Underwear	2,450	1.15	2,820	300	846	0.35	300
Apparel	Sleep wear	2,450	1.15	2,820	300	846	0.35	300
3. Wood								
Wood	Balsa	4,231	0.89	3,773	60	226	0.39	89
Wood	Wood Preforms	4,231	0.48	2,014	15	30	0.39	12
4. Furniture								
Furniture	Unspecified	2,610	0.48	1,242	15	19	0.37	7
Furniture	Rattan	2,610	0.48	1,242	150	186	0.37	68
5. Chemicals								
Chemical	Cosmetic	12,084	0.46	5,505	15	83	0.27	23
Chemical	Cosmetic	12,084	1.01	12,158	50	608	0.27	167
Chemical	Polyethylene film for food packing	8,806	1.01	8,860	60	532	0.27	144
Chemical	Plastics and shoes	8,806	0.79	6,967	150	1,045	0.27	283
6. Fabricated Metal Products								
Metal	Water Taps	5,117	0.74	3,795	60	228	0.38	87
Metal	Metal Coating	-	-	-	60	-	-	-
7. Electrical Machinery								
Electric	Lamp	14,337	0.44	6,365	15	95	0.45	42
Wire harnesses		-	-	-	100	-	-	-
Total					2,450			2,981

Remarks: * Average gross production per employee by industrial category. ** Ratio of gross production per employee in each category of number of employees to the average.

Sources: [1], [2] & [6] INEC " Encuesta Anual de Manufactura y Minería ", 1988

[4] Table H-4. ANNEX H

JICA