

13. 結論と提言

前章迄の事業化可能性検討を踏まえ、エスメラルダス輸出加工区の整備へ向けて以下の様な結論と提言をとりまとめる。

- 1) 計画面積22.7ha、30工場という規模のエスメラルダス輸出加工区は、もし外国及び国内企業の誘致が成功裡に実施されれば、財務的にはフィージブルになるものと判断される。即ち、3年間の内に工場が全て入居するものと仮定し、土地賃貸料金を0.5米ドル/m²/月とすれば、財務内部収益率は15.4%となる。
- 2) しかしながら、本調査の段階では、外国投資家のエスメラルダス輸出加工区に対する関心は必ずしも高くないと言わざるを得ない。エスメラルダス輸出加工区を経済的、財務的に成功させるためには、外国企業の誘致活動を強力に又持続的に推進する必要がある。

企業誘致活動は、ZOFREEやCENDESのみならずMICIP、外務省及び工業化や輸出振興に係わる関係諸機関が一体的かつ体系的に実施する必要がある。

企業誘致活動は、まず米国の投資家に対して行うことが必要であり、また同時に、NIES諸国（韓国、台湾、香港等）の企業に対しても積極的にアプローチすることが望まれる。

財務的なフィージビリティは企業立地の遅れに敏感であり、1年間の遅れが財務的フィージビリティを危うくすることに注意する必要がある。そうした意味からも企業誘致活動に最大限の努力を払うことが求められる。

- 3) 今回の投資需要調査で関心を示したエクアドル投資家の過半及び外国投資家の半数近くが合弁を望んでおり、企業誘致活動においては、投資家に対し外国及びエクアドル国企業との合弁先の仲介の労をとることが望まれる。
- 4) エスメラルダス輸出加工区の建設に必要な外部施設の整備を、各関連機関が分担することによりZOFREEを支援することが望まれる。外部施設の整備とは、1)エスメラルダス港湾局による漁港へのアクセス道路の付替工事、2)IEOSによる給水施設工事（送水管と配水タンク）、3)EMELESAによる電気供給工事（変電所及び配電線、但し、変電所の上屋は除く）、4)IETELによる通信施設工事である。もし、この外部施設が各諸機関で整備されず、ZOFREEが全てを負うことになった場合、財務的健全性が損なわれる。
- 5) 内部施設の整備コストは約562万ドルである。エクアドル政府が少なくともイ

ンフラストラクチャーの内貸分、約100万ドルを予算から支出し負担することが望まれる。そうすることにより、ZOFREEの財務状況が良好なものとなる。もし、政府の予算支出が得られない場合には、CFNによる資本参加とローン貸与及びBEDEによる建設コストの内貨部分に対する融資が必要となる。民間ローンによりエスメラルダス輸出加工区を建設する場合は、ZOFREEの財務状況は極めて厳しいものとなる。

- 6) 輸出加工区法による各種の奨励策は潜在投資家に歓迎されているが、インタビュー調査を通して次の点につき、輸出加工区法の見直し、改善が指摘されている。すなわち、1)CONAZOFRAへの2%のフィー支払、2)最低賃金に10%の上乗せ、そして3)労働者への利益分配規定である。MICIPはこうした潜在投資家の声に注意を払い、可能な限りこれらの企業誘致阻害要因をとり除くよう対策を講ずることが望まれる。
- 7) 外国投資家が投資を決断する要因のひとつは、信頼がおける基本的な訓練が施され、かつ妥当な賃金で雇用できる労働者の存在である。労働者や監督業務従事者の訓練は非常に重要であり、エスメラルダス市のSECAP施設を最大限に利用することが望まれる。さらに、良好な労使関係も重要事項であることが潜在投資家により指摘されている。
- 8) 適切な運行間隔による港湾貨物の輸送能力の整備は、港湾に立地する輸出加工区の必須条件である。現在、エスメラルダス港の取扱貨物量(20万トン/年)は処理能力(60万トン)をはるかに下廻っており、グアヤキル港が混雑状況を呈しているのとは対症的である。それ故、輸出加工区の発生貨物(約10万トン/年)の他、キト周辺の貨物をエスメラルダス港で取り扱うことにより、より多くの貨物船の就航を可能とすることが望まれる。スケジュール通りの原材料の調達及び製品の納入は輸出加工区の投資家にとって極めて重要である。
- 9) エスメラルダス輸出加工区が本調査による計画の通りに整備された場合でも、外国投資家にとってエスメラルダス市そのものが魅力的なものでない為に、投資が実現に至らない場合も懸念される。従って、エスメラルダス市当局は市内外のアメニティ及び社会基盤施設を整備し、特に、現在維持管理が充分でない都市下水道(雨水、汚水)システムを早急に改善する事が望まれる。あわせて、市内のゴミ処理の完備、道路の改善、緑地の整備、建物の景観規制も必要である。
- 10) エスメラルダス輸出加工区の成功のためには、関連諸機関の協力と調整が必要不可欠である。この点に鑑み、調整委員会の設置を提案する。本委員会にはZOFREE、CENDES、エスメラルダス港湾局を常任委員として、市当局、税関、EMELESA、IEOS、SECAP等を随時参画せしめる形で開催する。関連機関の調整

と、委員会によるリーダーシップがとられない限り、本プロジェクトの成功は困難となろう。

付 表

表 1-1 調査団及びカウンターパート名簿

Name	Position	
CENDES COUNTERPARTS		
Ing. Rodrigo Lucioparedes	General Manager	
Econ. Cesar Marcillo	Chief Counterpart	
Econ. Jaime Cueva	Advisor	
Econ. Eugenia Vallego	Industrial Specialist	
Ing. Eugenio Aleman	Industrial Consultant	
STUDY TEAM		
Mr. Hajime Koizumi	Team Leader	(Nippon Koei Co., Ltd.)
Mr. Masatoshi Akagawa	Sub-Leader, Industrial Planner	(Nippon Koei Co., Ltd.)
Mr. Isamu Asakura	Industrial Planner	(Nippon Koei Co., Ltd.)
Mr. Hiroshi Yamada	Demand Survey Export	(Nippon Koei Co., Ltd.)
Mr. Jiro Watanabe	Demand Survey Export	(Nippon Koei Co., Ltd.)
Mr. Manabu Fujikawa	Institutional Expert	(Regional Planning Int.)
Mr. Keisuke Okazaki	Water Supply-Sewerage	(Nippon Koei Co., Ltd.)
Mr. Yoshitomo Watanabe	Electricity-Telecomm.	(Nippon Koei Co., Ltd.)
Mr. Shigeo Nishihata	Geotechnical Engineer	(Nippon Koei Co., Ltd.)
Mr. Ryoichi Nishimura	Port Engineer	(Nippon Koei Co., Ltd.)
Mr. Riei Nagase	Economist	(Nippon Koei Co., Ltd.)

表 2-1 セクター別国内総生産

	(S/. mill., 1975 prices)									Sector ** Share (%)	Sub-sector Share (%)
	1981	1982	1983	1984	1985	1986	1987	1988*	1989*		
1. AGRICULTURE, HUNTING & FISHERY	22,647	23,101	19,891	22,007	24,178	26,656	27,323	29,678	30,581	18.9	100.0
Banana, Coffee, Cacao	4,023	4,208	2,718	3,071	3,955	4,000	3,183	3,592	3,916		12.8
Other Agricultural Products	7,680	7,112	5,457	6,734	7,011	8,595	8,880	9,902	10,336		33.8
Animal Production	7,578	8,043	8,043	8,326	8,737	8,990	8,967	9,606	10,127		33.1
Forestry, logging	1,593	1,739	1,724	1,662	1,712	1,879	1,935	1,827	1,813		5.9
Fishery & Hunting	1,773	1,999	1,949	2,214	2,763	3,192	4,358	4,751	4,389		14.4
GROWTH RATE (% per annum)	6.8	2.0	-13.9	10.6	9.9	10.2	2.5	8.6	3.0		
2. PETROLEUM AND MINING	15,992	15,527	19,893	21,879	23,875	24,513	11,107	25,319	23,501	14.5	100.0
1) PETROLEUM (Crude oil&Gas, Oil refinery)	15,493	15,019	19,105	20,864	22,861	23,348	9,925	23,811	21,987		93.6
2) OTHER MINING	499	508	788	1,015	1,014	1,165	1,182	1,508	1,514		6.4
GROWTH RATE (% per annum)	6.1	-2.9	28.1	10.0	9.1	2.7	-54.7	128.0	-7.2		
3. MANUFACTURING	29,159	29,584	29,183	28,643	28,710	28,241	28,729	29,381	28,272	17.4	100.0
1) FOOD PRODUCTS	12,177	12,315	11,518	11,335	10,848	10,770	11,075	11,025	9,900		35.0
Meat and Fish	2,539	2,661	2,571	2,434	2,156	2,663	2,878	3,072	2,798		
Grains and Baking	1,588	1,586	1,528	1,446	1,383	1,379	1,523	1,798	1,596		
Sugar	1,166	786	688	845	841	755	756	690	709		
Miscellaneous foods	3,572	3,772	3,485	3,328	3,179	2,779	2,553	2,364	1,723		
Beverages	2,795	2,891	2,796	2,793	2,775	2,698	2,879	2,658	2,632		
Manufactured Tobacco	517	619	450	489	514	496	486	443	442		
2) TEXTILES / GARMENTS	6,395	6,536	6,752	6,659	6,580	5,936	5,944	5,818	5,921		20.9
3) WOOD & FURNITURE	1,489	1,580	1,614	1,575	1,574	1,678	1,681	1,664	1,659		5.9
4) PAPER AND PRINTING	1,770	1,877	1,803	1,767	1,882	1,992	2,082	2,147	2,196		7.8
5) CHEMICALS - RUBBER	1,901	1,814	1,970	1,726	1,819	1,856	1,790	1,899	1,809		6.4
6) MINRERALS	3,557	3,671	3,563	3,473	3,773	3,615	3,334	3,740	3,584		12.7
7) MACHINERY/EQUIPMENT	968	926	932	886	971	1,102	1,251	1,383	1,568		5.5
8) OTHER MANUFACTURING	882	865	1,031	1,222	1,263	1,292	1,572	1,705	1,635		5.8
GROWTH RATE (% per annum)	8.8	1.5	-1.4	-1.9	0.2	-1.6	1.7	2.3	-3.8		
4. ELECTRICITY, GAS & WATER	1,117	1,241	1,426	1,836	1,833	2,232	2,616	2,789	2,871	1.8	
GROWTH RATE (% per annum)	0.2	11.1	14.9	28.8	-0.2	21.8	17.2	6.6	2.9		
5. CONSTRUCTION	7,239	7,285	6,728	6,583	6,742	6,841	7,011	6,359	6,282	3.9	
GROWTH RATE (% per annum)	4.8	0.6	-7.6	-2.2	2.4	1.5	2.5	-9.3	-1.2		
6. TRADE AND HOTELS	25,032	25,562	22,537	23,467	24,268	24,793	25,397	26,256	26,392	16.3	
GROWTH RATE (% per annum)	1.0	2.1	-11.8	4.1	3.4	2.2	2.4	3.4	0.5		
7. TRANSPORT/COMMUNICATION	10,517	10,687	10,511	10,914	11,506	12,571	12,829	13,486	14,175	8.7	
GROWTH RATE (% per annum)	4.8	1.6	-1.6	3.8	5.4	9.3	2.1	5.1	5.1		
8. FINANCIAL SERVICES/REAL ESTATE	18,274	18,590	18,972	17,679	18,162	18,579	21,095	22,978	19,629	12.1	
GROWTH RATE (% per annum)	3.3	1.7	2.1	-6.8	2.7	2.3	13.5	8.9	-14.6		
9. OTHER SERVICES	8,240	8,710	9,098	9,336	9,529	9,773	10,067	10,190	10,478	6.5	
GROWTH RATE (% per annum)	8.3	5.7	4.5	2.9	1.7	2.6	3.0	1.2	2.8		
10. Others	15,226	14,978	12,646	14,882	15,251	14,937	12,842	10,430	14,963		
TOTAL (GDP)	153,443	155,265	150,885	157,226	164,054	169,136	159,016	176,866	177,144		
GROWTH RATE (% per annum)	3.9	1.2	-2.8	4.2	4.3	3.1	-6.0	11.2	0.2		

Remarks : * Provisional

** The share represents the ratio of each categorie's value-added to total GDP excluding the item of 10. Others.

Source: Banco Central del Ecuador, "CUENTAS NACIONALES DEL ECUADOR: 1950 - 1989", 1990

表 2-2 エクアドル国の財政収支

	(US\$ mill.)					
	1985	1986	1987	1988	1989	1990
Balance on Current Account	114	-553	-1,131	-505	-472	-136
Trade Balance	1,294	543	-33	619	661	1,003
Exports	2,905	2,186	2,021	2,202	2,354	2,714
- Petroleum & Derivatives	1,927	983	817	976	1,147	1,409
- Others	978	1,203	1,204	1,226	1,207	1,305
Imports	-1,611	-1,643	-2,054	-1,583	-1,693	-1,711
Balance of Services & Rent	-1,260	-1,141	-1,230	-1,221	-1,230	-1,239
Transfers	80	45	132	97	97	100
Capital Account	-66	319	1,043	486	854	538
International Reserve	-48	234	88	19	-382	-402

Source: Banco Central del Ecuador

表 2-3 品目別輸出入額

	(US\$ mill., FOB for Export, CIF for Import)					
	1985	1986	1987	1988	1989	1990*
I. EXPORT						
1. Primary Commodities **	2,566	1,878	1,636	1,861	2,026	2,345
1) Crude Petroleum	1,825	912	646	875	1,033	1,258
2) Bananas	220	263	267	298	370	468
3) Shrimp	156	288	383	387	328	340
4) Coffee	191	299	192	152	142	104
2. Manufactured Goods **	339	308	291	332	328	369
1) Petroleum Derivatives	102	70	78	101	115	150
2) Manufactured Cacao	79	77	57	48	53	56
3) Manufactured Coffee	18	29	19	18	20	26
4) Metal Manufacture	2	5	7	11	18	13
5) Chemicals & Pharmacy	9	9	12	10	7	9
TOTAL EXPORT	2,905	2,185	1,928	2,193	2,354	2,714
II. IMPORT **						
1. Industrial Materials	769	726	792	708	839	811
2. Capital Goods for Industry	339	408	501	404	389	376
3. Transport Equipment	153	230	202	249	206	205
4. Consumer Goods	152	170	208	165	184	179
TOTAL IMPORT	1,767	1,810	2,158	1,714	1,855	1,862

Remarks : * Provisional

** Only major goods are presented in the table.

Source : Banco Central del Ecuador, "INFORMACION ESTADISTICA QUINCENAL", May 31, 1991

表 2-4 業種別企業数、従業員数及び生産額

	(1) No. of Enterprises	(2) No. of Employees	(3) Value of Production (S./mill.)	(4) (2)/(1)	(5) (3)/(1) (S./mill./ enterprise)	(6) (3)/(2) (S./mill./ employee)
1. Food and Beverages	388	35,144	410,067	91	1,057	12
2. Textile, Apparel & Leather	284	20,444	98,921	72	348	5
3. Wood & Furniture	113	6,713	24,181	59	214	4
4. Paper & Printing	113	7,433	78,653	66	696	11
5. Chemical, Rubber & Plastic	236	16,085	262,386	68	1,112	16
6. Non-metal & Basic Metal	120	7,074	107,881	59	899	15
7. Machinery	261	9,034	141,497	35	542	16
8. Other Manufacturing	22	689	3,547	31	161	5
Total	1,537	102,616	1,127,133	67	733	11

Source: INEC, "Encuesta Annual de Manufactura y Minería, Tomo 1", 1988

表 2-5 地域別、業種別企業数比率

	Pichincha Province			Guayas Province			Azuay Province		
	No. of Enterprises	No. of Employees	Value of Production (S/.mill.)	No. of Enterprises	No. of Employees	Value of Production (S/.mill.)	No. of Enterprises	No. of Employees	Value of Production (S/.mill.)
1. Food and Beverage	28	24	28	29	38	46	8	4	2
2. Textile, Apparel & Leather	60	72	77	11	10	11	14	8	6
3. Wood & Furniture	56	48	51	13	12	13	11	19	15
4. Paper & Printing	30	24	15	42	52	66	8	5	1
5. Chemical, Rubber & Plastic	39	30	21	57	50	37	12	8	6
6. Non-metal & Basic Metal	31	19	22	24	36	50	28	17	9
7. Machinery	48	53	58	26	31	34	12	9	5
8. Other Manufacturing	45	37	35	9	6	21	36	31	28
Total	42	41	34	27	34	40	12	9	5

Source: INEC, "Encuesta Anual de Manufactura y Minería, Tomo I", 1988

表 3-1 エスメラルダス州の人口

	Esmeraldas Province				Ecuador	
	Esmeraldas Canton		Province as a whole		Nos.	%
	Nos.	%	Nos.	%		
Year 1990						
Urban	98,065	56.8	134,379	43.7	5,305,911	55.1
Rural	74,584	43.2	172,811	56.3	4,316,697	44.9
Total	172,649	100.0	307,190	100.0	9,622,608	100.0
Year 1982						
Urban	90,360	64.3	118,185	47.7	3,938,800	49.0
Rural	50,153	35.7	129,685	52.3	4,099,635	51.0
Total	140,513	100.0	247,870	100.0	8,038,435	100.0
Average Growth Rate (% per year)						
Urban	1.03		1.62		3.79	
Rural	5.09		3.65		0.65	
Total	2.61		2.72		2.27	

Sources: INEC, "RESULTADOS PROVISIONALES: V Censo de Poblacion y IV de Vivienda", 1991
INEC, "IV Censo de Poblacion"

表 3-2 エスメラルダス州の就業構造

	Canton of Esmeraldas		Province of Esmeraldas		Ecuador	
	Nos.	%	Nos.	%	Nos. (1000)	%
I. URBAN AREA						
1. Economically Active	22784	39.0	29894	39.6	1206.9	43.9
a. Employed	20582	35.2	27011	35.8	1146.6	41.8
b. Unemployed *	2202	9.7	2883	9.6	60.2	5.0
- Always	377	1.7	444	1.5	15.7	1.3
- First Time	1825	8.0	2439	8.2	44.5	3.7
2. Economically Inactive	32770	56.1	41816	55.4	1471.8	53.6
a. Students	16987	29.1	20893	27.7	676.8	24.6
b. Household Work	13737	23.5	18299	24.2	707.4	25.8
c. Retired & Pensioners	479	0.8	554	0.7	31.2	1.1
d. Others	1567	2.7	2070	2.7	56.5	2.1
3. Not Declared	2868	4.9	3836	5.1	67.6	2.5
4. Total	58422	100.0	75546	100.0	2746.2	100.0
II. RURAL AREA						
1. Economically Active	13173	44.5	35907	47.2	1139.2	44.6
a. Employed	12245	41.4	33873	44.5	1091.8	42.7
b. Unemployed *	928	7.0	2034	5.7	47.4	4.2
- Always	96	0.7	261	0.7	8.8	0.8
- First Time	832	6.3	1773	4.9	38.6	3.4
2. Economically Inactive	15319	51.8	37707	49.6	1355.7	53.1
a. Students	5079	17.2	11309	14.9	392.9	15.4
b. Household Work	9051	30.6	23890	31.4	901.7	35.3
c. Retired & Pensioners	50	0.2	110	0.1	7.6	0.3
d. Others	1139	3.9	2398	3.2	53.4	2.1
3. Not Declared	1082	3.7	2459	3.2	599.4	23.5
4. Total	29574	100.0	76073	100.0	2554.3	100.0
III. TOTAL						
1. Economically Active	35957	40.9	65801	43.4	2346.1	44.3
a. Employed	32827	37.3	60884	40.2	2238.4	42.2
b. Unemployed *	3130	8.7	4917	7.5	107.7	4.6
- Always	473	1.3	705	1.1	24.6	1.0
- First Time	2657	7.4	4212	6.4	83.1	3.5
2. Economically Inactive	48089	54.6	79523	52.4	2827.5	53.3
a. Students	22066	25.1	32202	21.2	1069.7	20.2
b. Household Work	22788	25.9	42189	27.8	1609.2	30.4
c. Retired & Pensioners	529	0.6	664	0.4	38.8	0.7
d. Others	2706	3.1	4468	2.9	109.9	2.1
3. Not Declared	3950	4.5	6295	4.2	126.9	2.4
4. Total	87996	100.0	151619	100.0	5300.5	100.0

Remarks: * Unemployment Ratio = Nos. of Unemployed / Nos. of Economically Active Population x 100

Source: INEC, "IV Censo de Población",

INSTITUTO DE INVESTIGACIONES ECONOMICAS, "INDICATORS Y ESTADISTICAS BASICAS DE LA ECONOMIA ECUATORIAN/

表 3-3 エスメラルダス州の産業別就業人口 (1982年)

	Canton of Esmeraldas		Province of Esmeraldas		Ecuador	
	Nos.	%	Nos.	%	Nos.(1000)	%
1. URBAN AREA						
Agriculture, fishing & hunting	1,642	7.2	3,384	11.3	62.5	5.2
Mining	92	0.4	97	0.3	2.9	0.2
Manufacturing	2,431	10.7	3,302	11.0	190.9	15.8
Electricity, gas & water	240	1.1	266	0.9	9.7	0.8
Construction	1,554	6.8	1,888	6.3	100.8	8.4
Commerce	3,495	15.3	4,544	15.2	222	18.4
Transportation	1,302	5.7	1,586	5.3	75	6.2
Finances	235	1.0	264	0.9	41.7	3.5
Services	9,297	40.8	11,311	37.8	427.1	35.4
Other activities	671	2.9	813	2.7	29.6	2.5
New labors	1,825	8.0	2,439	8.2	44.5	3.7
Total	22,784	100.0	29,894	100.0	1206.9	100.0
2. RURAL AREA						
Agriculture, fishing & hunting	8,369	63.5	26,371	73.4	724.5	63.6
Mining	22	0.2	122	0.3	4.5	0.4
Manufacturing	741	5.6	1,441	4.0	95.6	8.4
Electricity, gas & water	24	0.2	39	0.1	3.5	0.3
Construction	253	1.9	429	1.2	57.2	5.0
Commerce	746	5.7	1,687	4.7	49.9	4.4
Transportation	102	0.8	246	0.7	26.3	2.3
Finances	10	0.1	14	0.0	2.4	0.2
Services	1,964	14.9	3,574	10.0	127.8	11.2
Other activities	110	0.8	211	0.6	9	0.8
New labors	832	6.3	1,773	4.9	38.6	3.4
Total	13,173	100.0	35,907	100.0	1139.2	100.0
3. TOTAL						
Agriculture, fishing & hunting	10,011	27.8	29,755	45.2	787.0	33.5
Mining	114	0.3	219	0.3	7.4	0.3
Manufacturing	3,172	8.8	4,743	7.2	286.5	12.2
Electricity, gas & water	264	0.7	305	0.5	13.2	0.6
Construction	1,807	5.0	2,317	3.5	158.0	6.7
Commerce	4,241	11.8	6,231	9.5	271.9	11.6
Transportation	1,404	3.9	1,832	2.8	101.3	4.3
Finances	245	0.7	278	0.4	44.1	1.9
Services	11,261	31.3	14,885	22.6	554.9	23.7
Other activities	781	2.2	1,024	1.6	38.6	1.6
New labors	2,657	7.4	4,212	6.4	83.1	3.5
Total	35,957	100.0	65,801	100.0	2346.1	100.0

Source: INEC, "IV Censo de Poblacion"

INSTITUTO DE INVESTIGACIONES ECONOMICAS, "INDICATORS Y ESTADISTICAS BASICAS DE LA ECONOMIA ECUATORIANA",

表 3-4 エスメラルダス州の教育水準

	Canton of Esmeraldas		Province of Esmeraldas		Ecuador	
	Nos.	%	Nos.	%	Nos.(1000)	%
1. URBAN AREA						
No Education	7725	10.6	11517	12.1	268.3	8.1
Center of Literacy	375	0.5	614	0.6	14.8	0.4
Primary		46.6		48.5		46.4
1 - 3	14451	19.8	20196	21.2	540.4	16.3
4 - 6	19603	26.8	25970	27.3	998.6	30.1
Secondary		25.7		23.5		28.5
1 - 3	11495	15.7	13965	14.7	530.8	16.0
4 - 6	7253	9.9	8459	8.9	414.1	12.5
Higher Education		5.2		4.4		8.3
1 - 3	2031	2.8	2239	2.4	147.3	4.4
4 & over	1748	2.4	1916	2.0	127.7	3.8
No declaration	8406	11.5	10347	10.9	277.6	8.4
Total	73087	100.0	95223	100.0	3319.6	100.0
2. RURAL AREA						
No Education	10679	27.5	32230	32.1	870.7	26.6
Center of Literacy	620	1.6	1880	1.9	77.4	2.4
Primary		55.4		53.5		58.2
1 - 3	11572	29.8	29764	29.6	877.4	26.8
4 - 6	9921	25.6	23919	23.8	1029.2	31.4
Secondary		8.0		5.2		7.7
1 - 3	2066	5.3	3650	3.6	174.7	5.3
4 - 6	1048	2.7	1577	1.6	76.6	2.3
Higher Education		1.3		0.8		0.9
1 - 3	258	0.7	446	0.4	18.1	0.6
4 & over	246	0.6	337	0.3	11.7	0.4
No declaration	2400	6.2	6588	6.6	140.5	4.3
Total	38810	100.0	100391	100.0	3276.3	100.0
3. TOTAL						
No Education	18404	16.4	43747	22.4	1139	17.3
Center of Literacy	995	0.9	2494	1.3	92.2	1.4
Primary		49.6		51.0		52.2
1 - 3	26023	23.3	49960	25.5	1417.8	21.5
4 - 6	29524	26.4	49889	25.5	2027.8	30.7
Secondary		19.5		14.1		18.1
1 - 3	13561	12.1	17615	9.0	705.5	10.7
4 - 6	8301	7.4	10036	5.1	490.7	7.4
Higher Education		3.8		2.5		4.6
1 - 3	2289	2.0	2685	1.4	165.4	2.5
4 & over	1994	1.8	2253	1.2	139.4	2.1
No declaration	10806	9.7	16935	8.7	418.1	6.3
Total	111897	100.0	195614	100.0	6595.9	100.0

Source: INEC, "CENSOS NACIONALES DE POBLACION 1982"

表 3-5 エスメラルダス州の農業現況

Major Products	1983	1984	1985		1988		1989	
	(Tons)	(Tons)	(Tons)	Share to National Production (%)	(Tons)	Share to National Production (%)	(Tons)	Share to National Production (%)
Field Corn	2,449	9,205	7,033	2.1	2,334	0.8	3,202	0.8
Bell Pepper	288	294	320	5.1	527	5.9	19	0.2
Avocado	964	1,023	1,198	8.3	1	0.0	668	5.0
Lemon	546	472	646	2.9	108	1.0	129	0.8
Orange	20,412	13,226	5,938	2.6	5,223	6.0	2,444	3.4
Papaya	1,690	1,314	2,701	8.8	141	0.6	163	0.9
Banana	154,584	191,792	175,757	18.6	310,582	8.8	308,373	8.5
Grapefruit	13,427	10,750	2,250	7.6	595	21.6	2,959	39.4
Coconut	49,932	36,462	15,000	39.1	8,105	7.8	12,510	34.9
African Palm	61,625	61,787	68,779	15.0	192,275	28.5	272,000	30.1
Mnila Hemp	3,840	8,562	2,250	22.6	1,030	4.7	682	4.9
Cacao Beans	1,513	1,816	5,841	4.5	6,682	7.9	6,619	8.0
Coffee Beans	3,493	3,960	4,364	3.6	14,039	4.1	5,989	4.6
Rubber	159	269	270	15.0	110	10.4	84	6.6

Source : Estimation by Ministry of Agriculture

表 3-6 地域別鉱工業生産額推移

Province	(Sucre million)								Average Growth Rate 1970~87 (% p.a.n.)
	1970	%	1975	1981	1985	1986	1987	%	
1. Coast Zone	6175.7	64.9	16,724.1	54,745.6	169,003.9	248,407.8	348,463.3	56.3	26.8
Esmeraldas	10.7	0.1	158.3	1,921.3	11,747	22,341.2	30,712.1	5.0	59.7
El Oro	92.6	1.0	483.6	718.6	1,780.7	3,688	12,162.7	2.0	
Guayas	5,178.5	54.5	14,386.7	46,013.7	136,907.3	19,590.8	273,631	44.2	
Los Rios	27	0.3	161.7	774.7	1,880.4	2,169.1	3,515.6	0.6	
Manabi	866.9	9.1	1,533.9	5,317.3	16,688.5	24,301.5	28,441.9	4.6	
2. Mountain Zone	3,326.2	35.0	11,057.8	41,232.1	134,599.6	196,788.9	267,717.3	43.3	29.4
3. Oriental Zone	7.4	0.1	26.1	31.8	818.2	1,079.1	24,416.9	0.4	40.6
4. Total	9,509.3	100.0	27,808	96,009.5	304,421.7	446,275.8	618,597.5	100.0	27.8

Source: INEC "Encuestas de Manufactura y Minería", elaborated by CENDES

表 3-7 エスメラルダス州の工業

Industries	No. of Establishments*	No. of Workers Employed	Value of Production (Sucre million)	Value-added (Sucre million)
Foodstuffs, Beverages & Tobacco	2	90	862	419
Wood Industry & Wood Products	5	623	1,346	385
Manufacture of Chemicals (Oil & Coal Derivatives), Rubber & Plastics	1	979	79,645	6,216
Total	8	1,692	81,853	7,020

Remark: * Establishments of which number of employees was more than ten.

Source: INEC, "Annual Manufacturing & Mining Survey", 1988

表 4-1 輸出加工区法と関連法の比較

Items	Law of Free Zones	Existing Laws
Customs and Foreign Trade Procedures	The import and export of merchandise, goods, raw materials and other items are exempted from customs taxes, duty and fees.	All imports are subject to ad valorem duties on the basis of their CIF value with the exceptions provided for in the law.
Tax Procedures	Users of the Free Zones are exonerated from income tax, value added tax, the payment of provincial, municipal or any other taxes. Users are exempted from taxes on patents and all taxes in force regarding production, use of patents and trade marks, technology transfers and profit repatriation (remittance abroad).	The annual income obtained are the object of the income tax. The law establishes progressive and proportional taxes. There are other taxes on trade marks, patents, sales on foreign currency, selective consumption, and so forth. Municipal taxes are paid on real estates, excise taxes and so on.
Currency Exchange and Financial Procedures	Users shall enjoy complete freedom in all currency exchange transactions among each other between free zones and abroad. Local commercial banks may provide endorsements for credit granted by banks abroad to free zone users.	The law on International Exchange establishes the official intervention exchange market, and orders to deposit in that market the foreign currency originating from exports and such foreign currency received by public and private institutions.
Procedures for Treatment of Capital	Foreign investment in free zones shall not be subject to existing foreign capital treatment procedure.	Legal regulations concerning foreign investment are set in a general manner under the Andean Pact's Decision 220. Under the Pact, there are some requirements for investment such as future nationalization through a fade-out agreement, minimum investment, transfer of foreign currencies.
Labor Procedures	Labor relations between free zone users and their workers shall be subjected to the labor laws in force, with the modifications - Labor contracts in free zones are by nature temporary. Therefore, they shall not be the provision of Article 14 of the Labor Code, null. The wages of workers engaged by free zone users must be at least 10% higher than the minimum wages received by workers of the same sector. Free zone user's workers shall be entitled to profit-sharing as provided for under the labor code.	The Labor Code, which contains labor regulations and develops the constitutional principles, are applied. The following are the principal obligation of employers towards their workers: to pay the compensation owed; to protect the worker's health and safety; to establish dining elementary school, stores and so on with conditions. The employer or the company will distribute 15% of the net profits among workers. In addition there are minimum wages for certain categories of workers. 15 or more workers may organize a labor committee with a minimum of one-half of the workers of the company with the purpose of entering into collective labor contract.

Remark: Article 14 of the Labor Code shows that no contract shall be less than one year.

Sources: The Law of Free Zones, The Labor Code, "Legal Aspects of Doing Business in Ecuador" (1989), "Guide for Investment in Ecuador" (by CENDES), and other related information on laws

表 4-2 アンデス諸国の輸出加工区法

	Ecuador	Bolivia	Colombia	Peru	Venezuela
Legislation					
Law/Decree	Yes	Pending	Yes	Yes	Yes
Date	1991	-	1985-86	Pending	1974
Administration	Mixed	Private	State	State	State
Objectives	Foreign trade	Exports; Jobs	Foreign trade; industry; regional development	Foreign industry; foreign exchange	Foreign trade; industry; regional development
Sectors	Trade & industry	Industry	Trade & industry	Trade & industry	Trade & industry
Incentives					
Tax/duty exemptions on imports of:					
Merchandise	Yes	Yes	Yes	Yes	Yes
National inputs	Yes	Yes	Yes	Yes	Yes
Equipment, machinery	Yes	Yes	Yes	Yes	Yes
Inputs, raw materials	Yes	Yes	Yes	Yes	Yes
Income	20 yrs	20 yrs	Permanent	15 yrs	5 yrs
Exports	Yes	20 yrs	Yes	No	Yes
Local taxes	Yes	10 yrs	Yes	15 yrs	10 yrs
Foreign currency handling	Free	No	Free	Free	Through Central Bank
Customs procedures	More flexible	No	More flexible	More flexible	More flexible
Access to local market	Yes, paying duty	Yes, paying duty	Yes, paying duty	Yes, paying duty	Yes, for national products
Requirements	Not specified	Minimum \$250,000 capital	Not specified	Not specified	Not specified
Foreign Investment					
Decision 24/220; Cartagena Agreement	Follows Decisions	Follows most of Decisions	Follows most of Decisions	Hasn't be regulated	Follows all Decisions
Other laws/decrees	Foreign investment law	Foreign investment law	Decreases	Supreme Decree	—
Labor laws					
Special system for BPZ	Temporary hiring	No	No	Temporary hiring	Fixed-term contracts

Source: CAF, "Study of Industrial Free Zones in the Andean Countries and in Costa Rica, Mexico and the Dominican Republic", 1989
(A part of information was updated by the JICA Study Team.)

表 5-1 業種の第1次選定

ISIC	Category of Industries	ISIC	Category of Industries
311-312	Food manufacturing	355	Rubber products
3111	Slaughtering, preserving meat	3559	Not classified (gloves, mats, etc.)
3113	Canning of fruit, vegetable	356	Plastic products not classified (plastic cup, mats, etc.)
3114	Canning of fish, crustacea	381	Fabricated metal products
3115	Vegetable, animal oil	3819	Not classified (metal cans, etc.)
3119	Cocoa, chocolate	382	Machinery
3121	Not classified (spice, coffee, etc.)	3825	Office machinery
3122	Prepared animal feeds	3829	Not classified (pump, air con., etc.)
313	Beverage industries	383	Electrical machinery, apparatus
3134	Soft drinks and water	3831	Industrial machinery
321	Textile	3832	Radio, television, etc
3212	Made-up textile goods	3833	Electrical housewares
3215	Cordage, rope & twine	3839	Not classified (batteries, etc.)
322	Wearing apparel	384	Transport equipment
323	Leather products	3843	Motor vehicles & parts
3233	Products of leather (luggage, bags)	385	Professional equipment
324	Footwear	3852	Photographic & optical goods
331	Wood & cork' products	3853	Watches & clocks
3311	Sawmills & wood product	390	Other manufacturing industries
332	Furniture & fixtures	3901	Jewelry & related articles
341	Paper & paper products	3903	Sporting & athletic goods
3412	Containers & boxes	3909	Not classified (toys, pen, etc.)
352	Other chemical products		
3522	Drug & medicines		
3523	Soap, perfumes, toilet goods		

表 5-2 エクアドル投資家の投資希望地

Current Location	Possible			Likely			Grand Total		
	Esmeraldas	Other Areas	Total	Esmeraldas	Other Areas	Total	Esmeraldas	Other Areas	Total
Pichincha	34	8	42	22	7	29	56	15	71
Guayas	12	41	53	25	-	25	37	41	78
Azuay	14	12	26	3	3	6	17	15	32
Other Provinces	-	4	4	-	-	-	-	4	4
Grand Total	60	65	125	50	10	60	110	75	185

表 5-3 USA及びメキシコの投資可能性

Are you interested in locating your new facility in Esmeraldas EPZ?

Industry (ISIC)	Frequencies				Total	
	Yes	Most Likely	Possibly	No (a)		
Basis (b) Percent of total respondents	1 3.6%	1 3.6%	8 28.6%	18 64.3%	28 100.0%	
Construction (500)	1	100.0%			1 3.6%	
Wood Furniture (3320)			1	12.5%	1 3.6%	
Apparel (3220)		1	100.0%	3 37.5%	2 11.1%	6 21.4%
Electronics (383)			2	25.0%	5 27.8%	7 25.0%
Food (31)			1	12.5%	4 22.2%	5 17.9%
Unknown (c)			1	12.5%		1 3.6%
Autos and Parts (3843)					3 16.7%	3 10.7%
Men's Toupees (2329)					1 5.6%	1 3.6%
Pens (3909)					1 5.6%	1 3.6%
Thermal Plastics (356)					1 5.6%	1 3.6%
Venture Capital (832)					1 5.6%	1 3.6%

Remarks:

- "No's" include all respondents who answered "No" plus those who indicated "No Interest" elsewhere on the survey form.
- The "Basis" is the total number of firms in the respondent categories. Percentage figures following the subsequent answers are the answers given as a percentage of the "Basis," unless otherwise noted.
- One respondent completed the survey, but did not identify himself or the firm. We were, therefore, unable to determine the respondent's industry.

表 5-4 USA及びメキシコ期待投資家等の属性

Characteristics	Reasonable Prospects (a)		Low-Probability Investors (a)		All Investors	
Basis (b)	6		35		41	
Percent of total interviews	14.6%		85.4%		100.0%	
Industry: (ISIC)						
Apparel (3220)	3	50.0%	8	22.9%	11	26.8%
Furniture (332)	1	16.7%	0	0.0%	1	2.4%
Electrical Auto Parts (3833)	1	16.7%	0	0.0%	1	2.4%
Industrial Construction (500)	1	16.7%	0	0.0%	1	2.4%
Wholesale/Retail (610)			10	28.6%	10	24.4%
Electronics (383)			6	17.1%	6	14.6%
Seafood Processing (3114)			3	8.6%	3	7.3%
Chocolates (3119)			2	5.7%	2	4.9%
Chemicals (35)			2	5.7%	2	4.9%
Paper Products (34)			1	2.9%	1	2.4%
Metal Nut Manufacturing (3819)			1	2.9%	1	2.4%
Electrical/Cable Wires (3889)			1	2.9%	1	2.4%
Brooms (331)			1	2.9%	1	2.4%
Country of Origin						
United States	5	83.3%	26	74.3%	31	75.6%
Mexico	1	16.7%	9	25.7%	10	24.4%
Has the firm invested overseas before?						
Yes	5	83.3%	13	37.1%	18	43.9%
No	1	16.7%	22	62.9%	23	56.1%
Has the firm taken part in duty-free and drawback (806/807) operations? (c)						
Yes	4	80.0%	6	46.2%	10	55.6%
No	1	20.0%	7	53.8%	8	44.4%
Unknown			3	23.1%	3	16.7%
Annual Sales						
\$1 million or less	0	0.0%	2	5.7%	2	4.9%
\$1 to \$10 million	1	16.7%	3	8.6%	4	9.8%
\$10 to \$50 million	0	0.0%	3	8.6%	3	7.3%
\$50 million or more	4	66.7%	2	5.7%	6	14.6%
No answer	1	16.7%	25	71.4%	26	63.4%
Volume of annual imports/reimports from overseas.						
Only two companies responded to this question.	\$40,000,000 and \$5,000,000					
Amount contemplated for an investment project.						
\$300,000 or less	1	16.7%	1	2.9%	2	4.9%
\$300,000 to \$1 million	2	33.3%	0	0.0%	2	4.9%
\$1 to \$5 million	1	16.7%	0	0.0%	1	2.4%
\$5 million or more	0	0.0%	0	0.0%	0	0.0%
No answer	2	33.3%	34	97.1%	36	87.8%

Remarks:

- All telephone and in-person interviews were ranked on a percentile scale of 1 to 10 according to the firm's likelihood of investment. A ranking of 10 is a high-probability investor and 9 is an intermediate-probability investor. Reasonable prospects or likely investors are those with a 9 or a 10 ranking. Rankings 8 through one are low-probability investors.
- The "Basis" is the total number of firms in the high or low categories. The percentage figures following most of the subsequent answers are the answers given as a percentage of the "Basis," unless otherwise noted.
- This question only applies to those firms which have invested abroad before.

表 5-5 期待投資家の一覧

No	ISIC Category	Lot size (ha)	Employee	Rental Factory	Remarks	
(Food)	1	3114 Canned food	2.4	60	-	*
	2	3121 Fried potato	0.15	15	X	*
	3	3121 Sea food	0.15	15	X	*
	4	3121 Shark's wing	0.6	15	X	
	5	3122 Animal feed	1.2	60	-	
	6	3113 Canned fruit	n.a	15	X	
	7	3113 Canned fruit	0.6	15	n.a	*
	8	3114 Canned shrimp	2.4	60	-	
	9	3121 Banana flour	n.a	300	-	
	10	3112 Cream, sirup	n.a	n.a	-	
	11	3122 Animal feed	n.a	n.a	n.a	
(Apparel)	1	322 Apparel	0.6	60	X	
	2	322 Blanket, etc.	0.15	15	X	
	3	322 Apparel	0.6	60	X	
	4	3219 Labels	0.15	60	X	*
	5	3219 Labels	0.15	60	X	
	6	322 Undershirt	2.4	60	-	
	7	322 Sport wear	n.a	15	X	
	8	321 Textile	n.a	300	X	
	9	322 Sport shirt	n.a	n.a	n.a	
	10	3219 Labels	n.a	15	-	
	11	322 Apparel	0.15	60	X	
	12	321 Textile	0.15	15	X	
	13	322 Panama hat	n.a	15	-	
	14	322 Sport wear	0.6	150	X	(USA)
	15	322 Under wear	1.2	300	X	(USA)
	16	322 Sleep wear	1.2	300	X	(USA)
(Chemical)	1	3523 Cosmetics	0.15	15	-	
	2	356 Plastic film	0.6	15	-	*
	3	3523 Detergent	0.6	15	-	
	4	356 Plastics	0.15	15	-	
	5	356 Plastics	n.a	60	-	
	6	3523 Soap, cream	0.15	15	X	
	7	356 Plastic bottle	n.a	4	X	
	8	356 Plastic shoes	0.15	300	X	
	9	356 Plastics	0.15	300	-	
	10	356 Film	0.6	15	X	
	11	3529 Tooth paste	n.a	4	X	
	12	356 Plastic shoes	0.6	300	X	
	13	3523 Cologne water	0.6	15	-	
(Wood, furniture)	1	3311 Balsa wood	1.2	15	X	
	2	3311 Wood mills	0.6	15	X	
	3	332 Furniture	0.15	300	n.a	
	4	332 Aluminum window	0.6	60	X	
	5	332 Rattan furniture	0.6	150	X	(Mexico)
(Metal)	1	3812 Water taps	0.6	60	-	
	2	3819 Metal coating	0.15	15	-	
	3	3819 Nickel coating	0.15	15	n.a	
(Electric Device)	1	3833 Lamp	0.15	15	X	
	2	3831 Control device	0.6	60	-	*
	3	3833 Wire harnesses	0.5	100	-	(USA)
(Others)	1	324 Leather	n.a	n.a	n.a	
	2	Banana trader	n.a	300	X	
	3	Car repairing	0.6	15	-	
	4	Developer	0.15	4	X	

Remark: * Ecuador and foreign enterprise joint venture

表 6-1 ロットサイズ別立地予想一覧

Lot No.	Industrial Category	Lot Size (m ²)	No. of Employee	Rental Factory	Remarks	
(Small Size Lot)	S-1	Food(Sea food)	2,100	15	X	*
	S-2	Food(Canned food)	1,500	15	-	*
	S-3	Apparel(Label)	1,900	50	X	*
	S-4	Furniture	1,500	15	-	
	S-5	Apparel(Blanket)	1,800	50	X	
	S-6	Apparel	1,500	40	-	
	S-7	Apparel	1,700	40	X	
	S-8	Apparel	1,500	40	-	
	S-9	Electric(Lamp)	1,500	15	X	
	S-10	Chemical(Cosmetic)	1,500	15	-	
	S-11	Apparel	1,600	40	-	
	S-12	Apparel	1,600	40	-	
	Sub total	19,700	365			
(Medium Size Lot)	M-1	Food	5,100	30	-	*
	M-2	Apparel	6,000	150	X	
	M-3	Apparel(Sport wear)	6,000	150	X	(USA)
	M-4	Apparel	6,000	150	-	
	M-5	Chemical(Plastic film)	6,000	60	-	*
	M-6	Chemical (Plastic shoes)	6,000	150	-	
	M-7	Chemical(Cosmetic)	5,400	50	-	
	M-8	Apparel	5,700	140	-	
	M-9	Electric control device	5,800	60	-	*
	M-10	Metal	5,800	60	-	
	M-11	Furniture(Rattan)	6,500	150	X	(Mexico)
	M-12	Wire harnesses	6,000	100	-	(USA)
	M-13	Wood mills	6,000	15	-	
	Sub total	76,300	1,265			
(Large Size Lot)	L-1	Apparel(Underwear)	12,000	300	X	(USA)
	L-2	Apparel(Sleep wear)	12,000	300	X	(USA)
	L-3	Animal feed	12,000	60	-	
	L-4	Wood	13,000	60	-	
	L-5	Canned food	22,000	100	-	*
	Sub total	71,000	820			
Total		167,000	2,450	10 Lots		
Administrative & service Facility			130			
Grand total		167,000	2,580			

Remark: *Ecuador and foreign enterprise joint venture

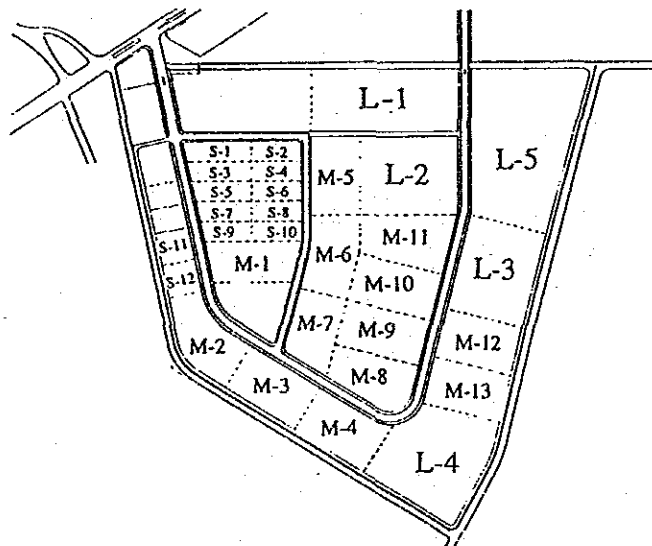


表 6-2 土地利用計画

Item	Area (ha)	Ratio (%)	Remarks
I. Factory lot	(16.70)	73.6	
1. Small size lot	1.97		
2. Medium size lot	6.43		
3. Large size lot	8.03		
II. Road	(3.91)	17.2	
1. Boulevard	0.26		
2. Main road	1.50		
3. Sub road	0.50		
4. Pedestrian deck	0.11		
5. Patrol road	0.99		Inclusive of existing access road to the fishing port (0.33ha)
6. Access road to the fishing port	0.55		
III. Administrative facility	(0.30)	1.3	Administration build. and fire station
IV. Service facility	(0.40)	1.8	Service build., gas station (0.05 ha) and bus terminal (0.1 ha)
V. Park	(1.00)	4.3	
1. Sports park	0.60		
2. Park	0.40		
VI. Utility	(0.40)	1.8	
1. Electric sub-station	0.20		
2. Sewage treatment plant	0.10		
3. Water supply tank	0.10		
VII. Total	22.71	100.0	

表 7-1 道路計画

(1)	Boulevard	Four (4)-lane road pedestrian should be constructed in the entrance area with the length of 150 m from the gate where the administrative and service facilities are concentrated considering of the control of the traffic flow in and out of various facilities.	<ul style="list-style-type: none"> • Width: 20 m • 4 lanes • Both sides pede. • Pavement: 50 cm
(2)	Main road	The main road which passes through the EEPZ from the gate to the port services to factory lots, particularly to large size lots.	<ul style="list-style-type: none"> • Width: 16 m • 2 lanes • Both sides pede. • Pavement: 35 cm
(3)	Sub road	This is the access road to the small size factory lot.	<ul style="list-style-type: none"> • Width: 12 m • 2 lanes • Both sides pede. • Pavement: 35 cm
(4)	Patrol road	The 4 m width road specified for the patrol activity surrounds the EEPZ. The existing access road to the fishing port between EEPZ and Esmeraldas port shall be utilized as the patrol road after the completion of the new access road.	<ul style="list-style-type: none"> • Width: 4 m • Pavement: 35 cm
(5)	The access road to the fishing port	The same standard as the existing road shall be reformed at the west and south edge of EEPZ.	<ul style="list-style-type: none"> • Width: 7 m • 2 lanes • Single side pede. • Pavement: 35 cm
(6)	Pedestrian deck	The exclusive pedestrian way connects factory lots and the entrance area	<ul style="list-style-type: none"> • Width: 6 m • Pavement: 15 cm

表 7-2 水需要量及び汚濁発生負荷量

Name of Industry	Water Demand (m ³ /day/ha) ㍓	Area for Each Lot (Ha)	Water Demand Per Day (m ³ /day)	Unit Pollutant Load /l			Pollutant Load		
				BOD (mg/l)	COD (mg/l)	SS (mg/l)	BOD (kg/day)	COD (kg/day)	SS (kg/day)
S - 1 Food (Sea Food)	294	0.21	61.74	1,200	1,350	425	74.0	83.0	26.0
2 Food	436	0.15	65.40	600	500	500	39.0	33.0	33.0
3 Apparel (Label)	178	0.19	33.82	10	10	50	0.3	0.3	1.7
4 Furniture	29	0.15	4.35	10	10	40	0.04	0.04	0.2
5 Apparel (Blanket)	306	0.18	55.08	10	10	30	0.6	0.6	1.7
6 Apparel	50	0.15	7.50	10	10	30	0.08	0.08	0.2
7 Apparel	50	0.17	8.50	10	10	30	0.09	0.09	0.3
8 Apparel	50	0.15	7.50	10	10	30	0.08	0.08	0.2
9 Electric Lamp	201	0.15	30.15	10	30	100	0.3	0.9	3.0
10 Chemical (Cosmetic)	98	0.15	14.70	350	350	100	5.0	5.0	1.5
11 Apparel	50	0.16	8.00	10	10	30	0.08	0.08	0.2
12 Apparel	50	0.16	8.00	10	10	30	0.08	0.08	0.2
M - 1 Food	294	0.51	149.94	1,200	1,350	425	180.0	202.0	64.0
2 Apparel	50	0.60	30.00	10	10	30	0.3	0.3	0.9
3 Apparel (Sport Wear)	38	0.60	22.80	10	10	30	0.2	0.2	0.7
4 Apparel	50	0.60	30.00	10	10	30	0.3	0.3	0.9
5 Chemical (Plastic Film)	447	0.60	268.20	300	460	100	80.0	123.0	27.0
6 Chemical (Plastic Shoes)	230	0.60	138.00	10	20	50	1.4	2.8	6.9
7 Chemical (Cosmetic)	98	0.54	52.92	350	350	100	18.5	18.5	5.3
8 Apparel	50	0.57	28.50	10	10	30	0.3	0.3	0.9
9 Electric Control Device	84	0.58	48.72	20	40	800	1.0	1.9	39.0
10 Metal	84	0.58	48.72	20	40	800	10.0	1.9	39.0
11 Furniture	16	0.65	10.40	10	10	30	0.1	0.1	0.3
12 Wire Harness	52	0.60	31.20	10	20	100	0.3	0.6	3.1
13 Woodmill	29	0.60	17.40	3,000	5,900	4,100	52.0	103.0	71.0
L - 1 Apparel (Underwear)	28	1.20	33.60	10	10	30	0.3	0.3	1.0
2 Apparel (Sleepwear)	20	1.20	24.00	10	10	30	0.2	0.2	0.7
3 Animal Feed	274	1.20	328.80	1,200	480	25	395.0	158.0	8.0
4 Wood	34	1.30	44.20	10	10	30	0.4	0.4	1.3
5 Food (Canned)	387	2.20	851.40	600	500	500	511.0	426.0	426.0
Total	-	16.70	2,463.54	-	-	-	1,362	1,163	764

Remark: /l Unit demand and unit load are assumed based on the result of demand survey and the data of Japanese industrial design stand

表 7-3 雨水流量及び排水施設設計

Pipe No.	Area (ha)	Accumulated Area (ha)	Discharge (m ³ /s)	Design of Drainage (mm)	Velocity (m/s)	Flow Capacity (m ³ /s)	Gradient (%)
1	0.36	-	0.048	U 300 x 240	0.580	0.056	2
2	0.26	0.62	0.082	U 300 x 360	0.639	0.094	2
3	0.37	0.99	0.131	U 450 x 450	0.790	0.226	2
4	1.50	2.49	0.329	U 600 x 600	0.991	0.512	2
5	0.54	3.03	0.401	U 600 x 600	0.991	0.512	2
	to 11						
6	0.29	-	0.038	U 300 x 300	0.614	0.076	2
7	0.50	0.79	0.105	U 360 x 360	0.691	0.122	2
8	0.42	1.21	0.160	U 450 x 450	0.790	0.226	2
9	0.50	1.71	0.226	U 450 x 450	0.790	0.226	2
10	0.68	2.39	0.316	U 600 x 600	0.991	0.512	2
11	0.36	5.78	0.765	U 600 x 600	1.469	0.765	4.4
12	1.25	7.03	0.930	U 600 x 600	1.854	0.960	8.0
	to 15						
13	0.33	-	0.044	U 240 x 240	0.541	0.044	2
14	0.17	0.50	0.066	U 360 x 360	0.691	0.122	2
15	0.71	8.24	1.090	φ 1100	1.282	1.218	1.8
	to 17						
16	0.41	-	0.054	U 300 x 240	0.580	0.056	2
17	-	8.65	1.144	φ 1100	1.282	1.218	1.8
	to the sea						
18	0.30	-	0.040	U 240 x 240	0.541	0.044	2
19	0.48	0.78	0.103	U 360 x 360	0.691	0.122	2
20	0.29	1.07	0.142	U 450 x 450	0.790	0.226	2
21	0.56	1.63	0.216	U 450 x 450	0.790	0.226	2
22	0.69	2.32	0.307	U 600 x 600	0.991	0.512	2
23	0.35	2.67	0.353	U 600 x 600	0.991	0.512	2
24	0.65	3.32	0.439	U 600 x 600	0.991	0.512	2
	to 29						
25	0.34	-	0.045	U 300 x 240	0.580	0.056	2
26	0.41	0.75	0.099	U 360 x 360	0.691	0.122	2
27	0.40	1.15	0.152	U 450 x 450	0.790	0.226	2
28	0.33	1.48	0.196	U 450 x 450	0.790	0.226	2
29	0.53	5.33	0.705	U 600 x 600	1.366	0.708	3.8
	to the sea						
30	0.25	-	0.033	U 240 x 240	0.541	0.044	2
31	0.42	0.67	0.089	U 300 x 360	0.639	0.094	2
32	0.42	1.09	0.144	U 450 x 450	0.790	0.226	2
	to 35						
33	0.24	-	0.032	U 240 x 240	0.541	0.044	2
34	0.44	0.68	0.090	U 300 x 360	0.639	0.094	2
35	0.55	2.32	0.307	φ 600	1.193	0.337	3.5
	to 39						
36	0.33	-	0.044	U 240 x 240	0.541	0.044	2
37	0.51	0.84	0.110	U 360 x 360	0.691	0.122	2
38	0.30	1.14	0.151	U 450 x 450	0.790	0.226	2
39	-	3.46	0.458	φ 700	1.203	0.463	2.9
	to the sea						
40	0.40	-	0.053	U 300 x 240	0.580	0.056	2
41	0.41	0.81	0.107	U 360 x 360	0.661	0.100	2
	to 44						
42	0.36	-	0.048	U 300 x 240	0.580	0.056	2
43	0.41	0.77	0.102	U 360 x 360	0.691	0.122	2
44	0.62	2.20	0.291	φ 600	1.193	0.337	3.5
	to 46						
45	0.41	-	0.054	U 300 x 240	0.580	0.056	2
46	-	2.61	0.345	φ 700	1.203	0.463	2.9
	to the sea						
47	0.32	-	0.042	U 240 x 240	0.541	0.044	2
48	0.39	0.71	0.094	U 300 x 360	0.639	0.094	2
49	0.29	1.00	0.132	U 450 x 450	0.790	0.226	2
50	0.22	1.22	0.161	U 450 x 450	0.790	0.226	2
51	0.37	1.59	0.210	U 450 x 450	0.790	0.226	2
52	0.62	2.21	0.292	U 600 x 600	0.991	0.512	2
53	0.59	2.80	0.370	U 600 x 600	0.991	0.512	2
	to 56						
54	0.36	-	0.048	U 300 x 240	0.580	0.056	2
55	0.21	0.57	0.075	U 300 x 300	0.614	0.076	2
56	-	3.37	0.446	φ 700	1.203	0.463	2.9

表 7-4 廃棄物発生量

Name of Industry	Combustible (1) /1 (Ton/Ha)	Incombustible Solid (2) /1 (Ton/Ha)	Area of Each Lot (3) (Ha)	Combustible (1) x (3) Ton	Incombustible (2) x (3) Ton
S - 1 Food (Sea Food)	0.40	0.09	0.21	0.084	0.019
2 Food	0.40	0.09	0.15	0.060	0.014
3 Apparel (Label)	0.08	-	0.19	0.015	-
4 Furniture	0.34	0.03	0.15	0.051	0.005
5 Apparel (Blanket)	0.08	0.01	0.18	0.014	0.002
6 Apparel	0.08	0.01	0.15	0.012	0.002
7 Apparel	0.08	0.01	0.17	0.014	0.002
8 Apparel	0.08	0.01	0.15	0.012	0.002
9 Electric Lamp	0.04	0.09	0.15	0.006	0.014
10 Chemical (Cosmetic)	0.29	0.07	0.15	0.044	0.011
11 Apparel	0.08	0.01	0.16	0.013	0.002
12 Apparel	0.08	0.01	0.16	0.013	0.002
M - 1 Food	0.40	0.09	0.51	0.204	0.046
2 Apparel	0.08	0.01	0.60	0.048	0.006
3 Apparel (Sport Wear)	0.08	0.01	0.60	0.048	0.006
4 Apparel	0.08	0.01	0.60	0.048	0.006
5 Chemical (Plastic Film)	0.29	0.07	0.60	0.174	0.042
6 Chemical (Plastic Shoes)	0.29	0.07	0.60	0.174	0.042
7 Chemical (Cosmetic)	0.29	0.07	0.54	0.157	0.038
8 Apparel	0.08	0.01	0.57	0.046	0.006
9 Electric control Device	0.17	3.00	0.58	0.099	1.740
10 Metal	0.17	3.00	0.58	0.099	1.740
11 Furniture	0.34	0.03	0.65	0.221	0.020
12 Wire Harness	0.17	3.00	0.60	0.102	1.800
13 Woodmill	0.34	0.03	0.60	0.204	0.018
L - 1 Apparel (Underwear)	0.08	0.01	1.20	0.096	0.012
2 Apparel (Sleepwear)	0.08	0.01	1.20	0.096	0.012
3 Animal Feed	0.40	0.09	1.20	0.480	0.108
4 Wood	0.34	0.03	1.30	0.442	0.039
5 Food (Canned)	0.40	0.09	2.20	0.880	0.198
Total				3.956	

Remark: /1 Unit demand and unit load are assumed based on the result of demand survey and the data of Japanese industrial design standard.

表 8-1 水質調查結果

Point No.	1	2	3	4	5
Location	Polluted Water Area in the Sea	Clean Water Area in the Sea	Downstream of the River	Upperstream of the River	Chamber of Pumping Station
Time	7:40	8:00	8:45	9:20	10:40
Atmospheric Temperature (°C)	26	28	30	30	35
Water Temperature (°C)	23	24	25	26	30
pH	7.70	7.90	7.66	7.40	8.10
Transparency (m)	1.40	1.70	0.80	0.60	-
Turbidity (NTU) ¹	0.90	0.75	7.50	14.0	-
Color (Pt/co) ²	10	5	20	30	-
Dissolved Oxygen (mg/l)	6.20	6.70	7.10	6.90	-
BOD (mg/l)	7.5	6.3	13.5	1.2	510
COD (mg/l)	577	106	462	19	
SS (mg/l)	8720	8180	584	60	568
Coliform (MPN/100 ml)					
Total	3600	20	460	9	110 x 10 ⁶
Fatal	0	0	15	3	35 x 10 ⁶

Remarks: ¹ Nephelometric Turbidity Unit
² Platinum/Cobalt

表 9-1 施設整備分担

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	-

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

表11-1 建設コスト (内部費用)

(Unit : \$1,000)

Item	Foreign Currency	Local Currency	Total
I Construction Cost			
1 Land leveling	0	132	132
2 Infrastructure			
1) Road	0	91	91
2) Drainage	0	326	326
3) Water supply	0	0	0
4) Sewerage	1,029	265	1,294
5) Solid Waste Disposal	0	217	217
6) Electric facility	0	50	50
7) Telecommunication	0	0	0
8) Sub total	1,029	950	1,979
3 Standard factory	242	1,749	1,990
4 Administrative facility	9	86	95
5 Service facility	9	90	99
6 Others	0	105	105
7 Sub total	1,288	3,112	4,400
II Engineering and Administration Cost	103	249	352
III Promotion Cost	227	157	384
IV Physical Contingency	139	336	475
Total	1,757	3,854	5,611

Remarks: /1 At June 1991 prices

/2 Land is subsidized by Port Authority.

表11-2 建設コスト (外部費用)

(Unit : \$1,000)

Item	Foreign Currency	Local Currency	Total
I Construction Cost			
1 Infrastructure			
1) Access Road to fishing port	0	16	16
2) Water supply	152	256	408
3) Sub total	152	272	424
2 Gasoline station	2	16	18
3 Sub total	154	288	441
II Engineering and Administration Cost	12	23	35
III Promotion Cost	0	0	0
IV Physical Contingency	17	31	48
Total	182	342	524

Remarks: /1 At June 1991 prices

 /2 Land is subsidized by Port Authority.

表11-3 建設コスト (内部及び外部費用)

(Unit : \$1,000)

Item	Foreign Currency	Local Currency	Total
I Construction Cost			
1 Land leveling	0	132	132
2 Infrastructure			
1) Road	0	107	107
2) Drainage	0	326	326
3) Water supply	152	256	408
4) Sewerage	1,029	265	1,294
5) Solid Waste Disposal	0	217	217
6) Electric facility	0	50	50
7) Telecommunication	0	0	0
8) Sub total	1,181	1,222	2,402
3 Standard factory	242	1,749	1,990
4 Administrative facility	9	86	95
5 Service facility	11	107	117
6 Others	0	105	105
7 Sub total	1,441	3,400	4,841
II Engineering and Administration Cost	115	272	387
III Promotion Cost	227	157	384
IV Physical Contingency	156	367	523
Total	1,939	4,196	6,135

Remarks: /1 At June 1991 prices

/2 Land is subsidized by Port Authority.

表11-4 建設コストの支出計画 (内部費用)

Cost Items	(US\$ 1000, 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	0	0	0	0	0	0	0	132	132
2. Infrastructure											
1) Road (Main / Submain Road)	0	0	0	91	91	0	0	0	0	0	91
2) Drainage	0	109	0	217	217	0	0	0	0	0	326
3) Water Supply	0	0	0	0	0	0	0	0	0	0	0
4) Sewerage	343	88	431	686	177	863	0	0	0	1,029	265
5) Solid Waste Disposal	0	0	0	217	217	0	0	0	0	0	217
6) Electric Facility	0	0	0	50	50	0	0	0	0	0	50
7) Telecommunication	0	0	0	0	0	0	0	0	0	0	0
Sub-total	343	197	540	686	753	1,438	0	0	0	1,029	950
3. Standard Factory	0	0	0	20	143	163	46	332	378	1,273	1,449
4. Administrative Facility	0	0	0	9	86	95	0	0	0	9	86
5. Service Facility (Exclu. Gas Station)	0	0	0	0	0	0	0	9	90	99	90
6. Park, Sports park	0	0	0	0	0	0	0	0	58	58	0
7. Others (Gate, Fence, Bus Terminal)	0	0	0	0	47	47	0	0	0	0	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. ENGINEERING AND ADMINISTRATION	27	26	54	57	82	139	4	27	30	15	114
											128
											103
											249
III. PROMOTION COST	32	22	55	65	45	110	65	45	110	65	45
											110
											227
											157
IV. PHYSICAL CONTINGENCY	37	36	73	77	111	188	5	36	41	20	154
											173
											139
											336
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	20	20	0	42	42	0	64
2. Others (Guard, Driver etc.)	0	0	0	0	0	0	0	0	10	10	19
Sub-total	0	17	17	0	20	20	0	42	42	0	83
											83
											86
II. DIRECT COST OF O & M											
1. Infrastructure	0	0	0	0	0	0	0	0	75	75	75
2. Standard Factory	0	0	0	0	0	0	3	3	10	11	35
3. Administrative facility	0	0	0	0	0	0	0	1	1	0	1
4. Service Building	0	0	0	0	0	0	0	0	0	0	1
5. Others	0	0	0	0	0	0	0	1	1	0	2
Sub-total	0	0	0	0	0	0	1	80	81	1	87
											88
											115
											120
III. TOTAL	0	17	17	0	20	20	0	42	42	1	170
											171
											5
											201
											206

表11-5 建設コストの支出計画 (内部及び外部費用)

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	132	0	0	0	0	0	0	0	132
2. Infrastructure										
1) Road	0	0	0	107	0	0	0	0	0	107
2) Drainage	0	109	0	217	0	0	0	0	0	326
3) Water Supply	51	85	136	101	171	272	0	0	152	256
4) Sewerage	343	88	431	686	177	863	0	0	1,029	265
5) Solid Waste Disposal	0	0	0	217	0	0	0	0	0	217
6) Electric Facility	0	0	0	50	0	0	0	0	0	50
7) Telecommunication	0	0	0	0	0	0	0	0	0	0
Sub-total	394	282	676	787	939	1,726	0	0	1,181	1,222
3. Standard Factory	0	0	0	20	143	163	46	332	378	1,449
4. Administrative Facility	0	0	0	9	86	95	0	0	0	9
5. Service Facility	0	0	0	0	0	0	0	11	107	117
6. Park, Sports park	0	0	0	0	0	0	0	58	58	58
7. Others (Gatc. Fence, Bus Terminal)	0	0	0	47	47	0	0	0	0	47
TOTAL	394	414	808	815	1,215	2,031	46	332	378	1,866
II. ENGINEERING AND ADMINISTRATION	31	33	65	65	97	162	4	27	30	115
III. PROMOTION COST	32	22	55	65	45	110	65	45	110	227
IV. PHYSICAL CONTINGENCY	42	45	87	88	131	219	5	36	41	156
V. TOTAL	500	515	1,015	1,034	1,489	2,522	119	440	559	2,039
										1,939
										4,196
										6,135
O & M COST										
I. REMUNERATION										
1. Main Staff	0	17	17	0	0	42	0	53	53	64
2. Others (Guard, Driver etc.)	0	0	0	0	0	0	0	10	10	19
Sub-total	0	17	17	0	0	42	0	62	62	83
II. DIRECT COST OF O & M										
1. Infrastructure										
2. Standard Factory										
3. Administrative facility										
4. Service Building										
5. Others										
Sub-total										
TOTAL	0	17	17	0	0	42	4	148	152	180
										8
										207
										215

表11-6 他輸出加工区の賃貸価格例

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

表11-7 ZOFREEの収入予想

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

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

表11-8 財務的支出、収入の流れ（内部費用）

(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

表11-9 財務的支出、収入の流れ（内部及び外部費用）

(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

表11-10 プロジェクト費用 (内部費用)

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	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	0	0	0	0	0	105
2) Drainage	0	125	0	250	0	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	1,092
3. Standard Factory	0	0	0	23	165	187	53	382	202	1,464
4. Administrative Facility	0	0	0	10	99	109	0	0	10	99
5. Service Facility (Exclu. Gas Station)	0	0	0	0	0	0	0	0	10	104
6. Park, Sports park	0	0	0	0	0	0	0	67	67	67
7. Others (Gate, Fence, Bus Terminal)	0	0	0	54	54	0	0	0	0	54
Total	394	378	773	821	1,183	2,005	53	382	213	1,847
II. ENGINEERING AND ADMINISTRATION	32	30	62	66	95	160	4	31	17	131
III. PROMOTION COST	37	26	63	75	52	126	75	52	126	261
IV. PHYSICAL CONTINGENCY	43	41	83	89	128	216	6	41	23	177
V. TOTAL	506	475	981	1,050	1,457	2,508	137	506	327	1,994
VI. PRICE CONTINGENCY	114	107	220	879	1,220	2,099	241	888	1,129	6,247
GROUND TOTAL	619	582	1,202	1,929	2,678	4,607	378	1,394	1,772	13,552
									2,258	8,462
									4,279	12,894
									17,173	
									2,020	4,432
									6,452	
									10,720	
									17,173	
Cost Items										
O & M COST										
I. REMUNERATION										
1. Main Staff	0	19	0	23	0	48	48	61	0	73
2. Others (Guard, Driver etc.)	0	0	0	0	0	0	0	11	0	22
Sub-total	0	19	0	23	0	48	48	72	0	95
II. DIRECT COST OF O & M										
1. Infrastructure	0	0	0	0	0	0	0	87	0	87
2. Standard Factory	0	0	0	0	0	0	3	4	2	11
3. Administrative facility	0	0	0	0	0	0	1	2	0	3
4. Service Building	0	0	0	0	0	0	0	0	0	0
5. Others	0	0	0	0	0	0	1	1	0	2
Sub-total	0	0	0	0	0	0	92	93	2	102
III. TOTAL	0	19	0	23	0	48	48	164	165	2
IV. PRICE ESCALATION	0	0	0	5	5	40	40	288	289	5
GROUND TOTAL	0	19	0	28	28	88	88	452	454	7

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)

表11-11 ZOFREE資本の増加予測

Case 1 (without CFN's participation)				(S/. million in Current Prices)			
Equity	Equity	O&M + Promotion*	Equity	Interests	Tax on	Interests	
	Employed	+ Repayment	Unemployed	Receivable**	Interests after Tax		
1991	208	19	19	189	2	0	2
1992	191	60	60	131	63	5	58
1993	189	189	504	0	0	0	0
1994	0	0	2,361	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 participation)				(S/. million in Current Prices)			
Equity*	Equity	O&M + Promotion**	Equity	Interests	Tax on	Interests	
	Employed	+ Repayment	Unemployed	Receivable***	Interests after Tax		
1991	208	19	19	189	2	0	2
1992	607	60	60	547	263	21	242
1993	789	504	504	285	137	11	126
1994	411	411	2,361	0			

Remarks: * CFN is assumed to give ZOFREE S/.208 million, resulting in its share of 50% of the increased stock 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.

表11-12 キャッシュフロー (代替案1、ケース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	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	0
3) CFN (Working Capital)	0	0	2	199	583	1,493	2,413	3,746	5,387	7,407	9,658	11,743	12,099	7,374	877	0	0
Sub-total	0	147	1,752	2,701	7,216	8,270	9,359	10,356	11,682	13,234	14,770	15,602	14,222	8,516	877	0	0
Total Cost	19	252	2,072	3,502	8,551	9,739	11,563	13,561	15,640	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	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	16	1,952	4,976	13,423	20,686	35,040	50,027	69,392	91,324	113,520	123,691	86,680	0	0	0	0
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	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0
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	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	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	0	0
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	0	0
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.

表11-13 キャッシュフロー (代替案1、ケース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	1,335	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
Total Cost																	
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	619	1,929	380	1,359	0	0	0	0	0	0	0	0	0	0	0	0
1) CFN (Foreign Portion)	0	551	2,583	1,252	8,027	0	0	0	0	0	0	0	0	0	0	0	0
2) BEDE	0	0	854	3,681	10,368	16,775	29,039	40,616	54,704	68,424	77,796	67,962	67,962	67,962	67,962	67,962	67,962
3) CFN (Working Capital)	0	1,170	5,366	5,313	20,253	16,775	29,039	40,616	54,704	68,424	77,796	67,962	67,962	67,962	67,962	67,962	67,962
Sub-total	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
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	0	0	0
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	0	0	0
2) BEDE	0	0	0	908	4,699	14,738	26,465	41,019	58,402	78,754	98,990	110,577	90,073	19,566	0	0	0
3) CFN (Working Capital)	0	0	0	0	0	977	5,091	47,458	68,670	93,100	118,719	133,855	101,328	31,076	0	0	0
Sub-total	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	0	0	0
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	0	0	0
SURPLUS (DEFICIT)	0	0	0	0	0	0	0	0	0	0	0	0	3,727	130,721	237,151	343,218	1,494,438
CUMULATIVE SURPLUS	0	0	0	0	0	0	0	0	0	0	0	0	3,727	134,448	371,598	714,816	

Remarks:

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

** ZOFREE exempts from tax. Depreciation is excluded.

*** Depreciation is excluded.

表11-14 キャッシュフロー (代替案2、ケース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) Interests & Other Charges	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
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	0	0	0	0	0	0	0	0	0	0	
3) CFN (Working Capital)	0	0	0	138	465	1,813	2,253	2,128	2,908	2,997	2,316	643	17	660	0		
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	1,562	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 exempt from tax. Depreciation is excluded.
- *** Depreciation is excluded.

表11-15 キャッシュフロー (代替案2、ケース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	1,335	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	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												
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

** ZOFFREE exempt from tax. Depreciation is excluded.

*** Depreciation is excluded.

表11-16 キャッシュフロー (代替案3)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2010
(S/ 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	0	0
2) Commercial (Local Portion)	0	137	1,446	701	4,495	0	0	0	0	0	0	0	0	0	0	0	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	13,238	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	3,037	4,888	8,717	12,794	18,778	21,796	10,095	10,506	0	0	0
2) Commercial (Local Portion)	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	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 exempts from tax. Depreciation is excluded.
 *** Depreciation is excluded.

表12-1 プロジェクト費用 (経済費用)

(US\$ 1000 in June, 1991 Prices)

Cost Items	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	114	114	0	0	0	0	0	0	0	0	0	0	0	114
2. Infrastructure	0	0	0	0	93	93	0	0	0	0	0	0	0	0	93
1) Road	0	94	94	0	188	188	0	0	0	0	0	0	0	0	282
2) Drainage	46	74	120	92	148	240	0	0	0	0	0	0	138	221	360
3) Water Supply	312	77	388	623	153	777	0	0	0	0	0	0	935	230	1,165
4) Sewerage	0	0	0	0	188	188	0	0	0	0	0	0	0	188	188
5) Solid Waste Disposal	0	0	0	0	43	43	0	0	0	0	0	0	0	43	43
6) Electric Facility	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7) Telecommunication	358	244	602	715	813	1,529	0	0	0	0	0	0	1,073	1,058	2,131
Sub-total	0	0	0	18	124	142	42	288	330	160	1,102	1,262	220	1,514	1,734
3. Standard Factory	0	0	0	8	75	82	0	0	0	0	0	0	8	75	82
4. Administrative Facility	0	0	0	0	0	0	0	0	0	10	92	102	10	92	102
5. Service Facility	0	0	0	0	0	0	0	0	0	0	50	50	0	50	50
6. Park, Sports park	0	0	0	0	41	41	0	0	0	0	0	0	0	41	41
7. Others (Gate, Fence, Bus Terminal)	358	359	716	741	1,052	1,794	42	288	330	169	1,245	1,414	1,310	2,944	4,254
TOTAL	29	29	57	59	84	143	3	23	26	14	100	113	105	235	340
II. ENGINEERING AND ADMINISTRATION															
	29	19	49	59	39	98	59	39	98	59	39	98	206	136	342
III. PROMOTION COST															
	39	39	77	80	114	194	5	31	36	18	134	153	142	318	459
IV. PHYSICAL CONTINGENCY															
	454	446	900	940	1,289	2,229	108	381	489	260	1,517	1,778	1,763	3,633	5,396
V. TOTAL															
VI. ASSOCIATED COST															
1. Power Supply				1,322	98	1,420							1,322	98	1,420
2. Telecommunication				35	39	74							35	39	74
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	0	36	36	0	46	46	0	55	55	0	58	58
2. Others (Guard, Driver etc.)	0	0	0	0	0	0	0	8	8	0	17	17	0	17	17
Sub-total	0	14	14	0	36	36	0	54	54	0	72	72	0	74	74
II. Direct cost of O & M															
1. Infrastructure	0	0	0	0	0	0	3	70	73	3	70	73	3	70	73
2. Standard Factory	0	0	0	0	0	0	2	3	3	1	8	9	4	30	35
3. Administrative facility	0	0	0	0	0	0	1	1	1	0	1	1	0	1	1
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	1	1	1	0	1	1	1	1	2
Sub-total	0	0	0	0	0	0	3	74	78	4	80	84	7	104	112
III. Total	0	14	14	0	36	36	3	128	132	4	152	156	7	179	186
IV. Associated O & M															
	0	0	0	0	0	0	0	26	26	0	26	26	0	26	26
V. Ground Total	0	14	14	0	36	36	3	154	158	4	178	182	7	205	212

表12-2 経済的支出、収入の流れ (ケース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

表12-3 経済的支出、収入の流れ (ケース 2)

(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	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

表12-4 経済的支出、収入の流れ (ケース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

付 図

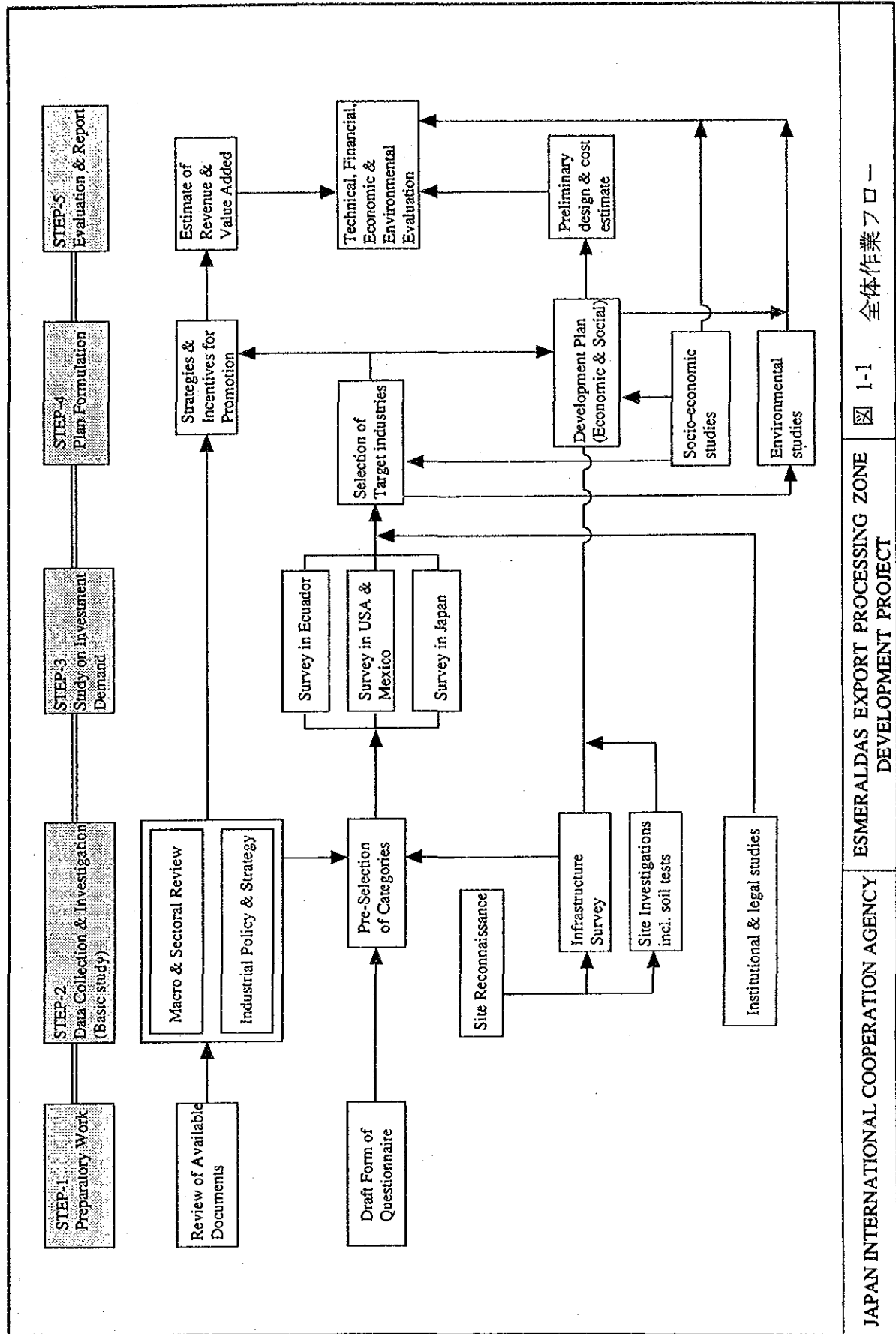
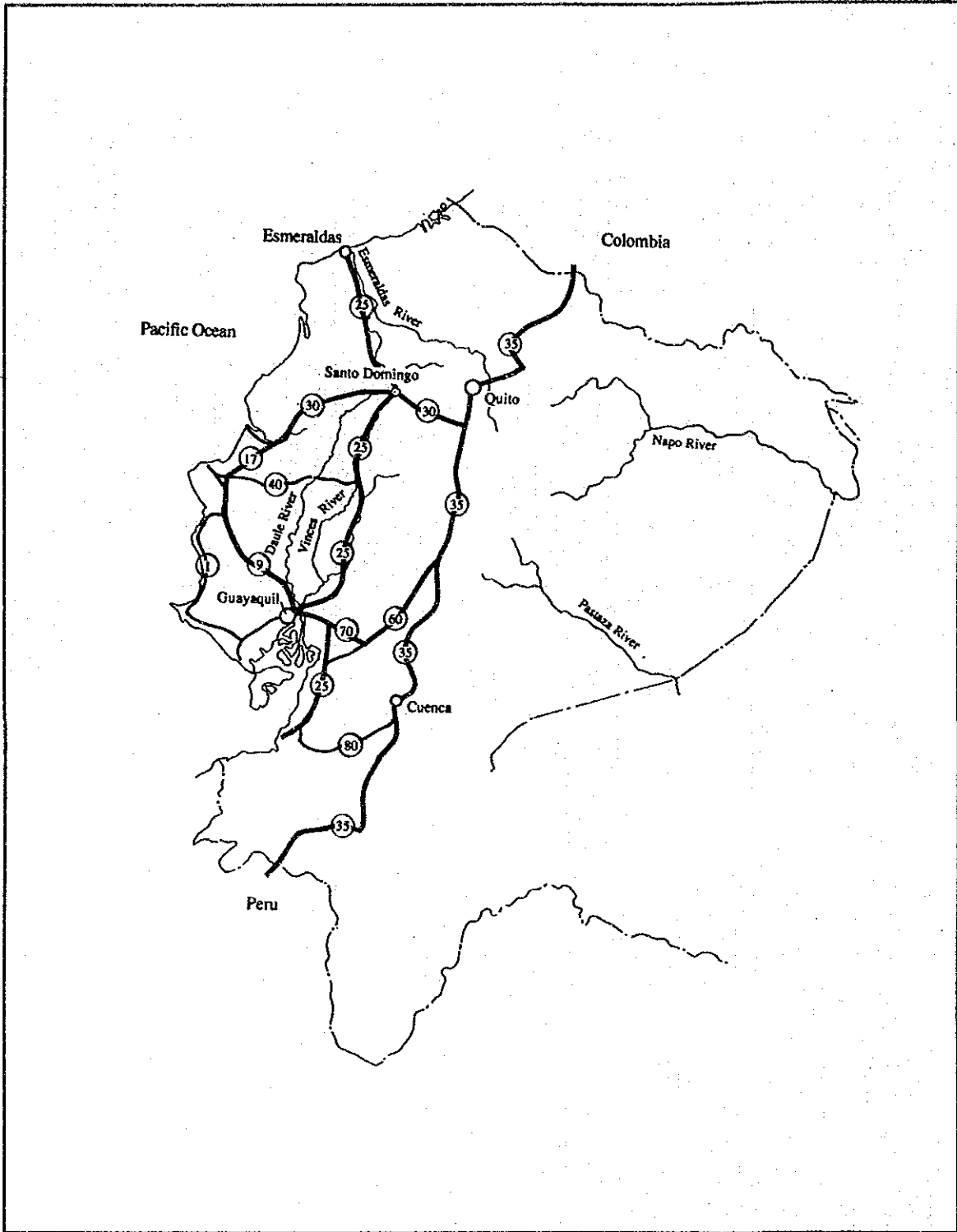


図 1-1 全体作業フロー

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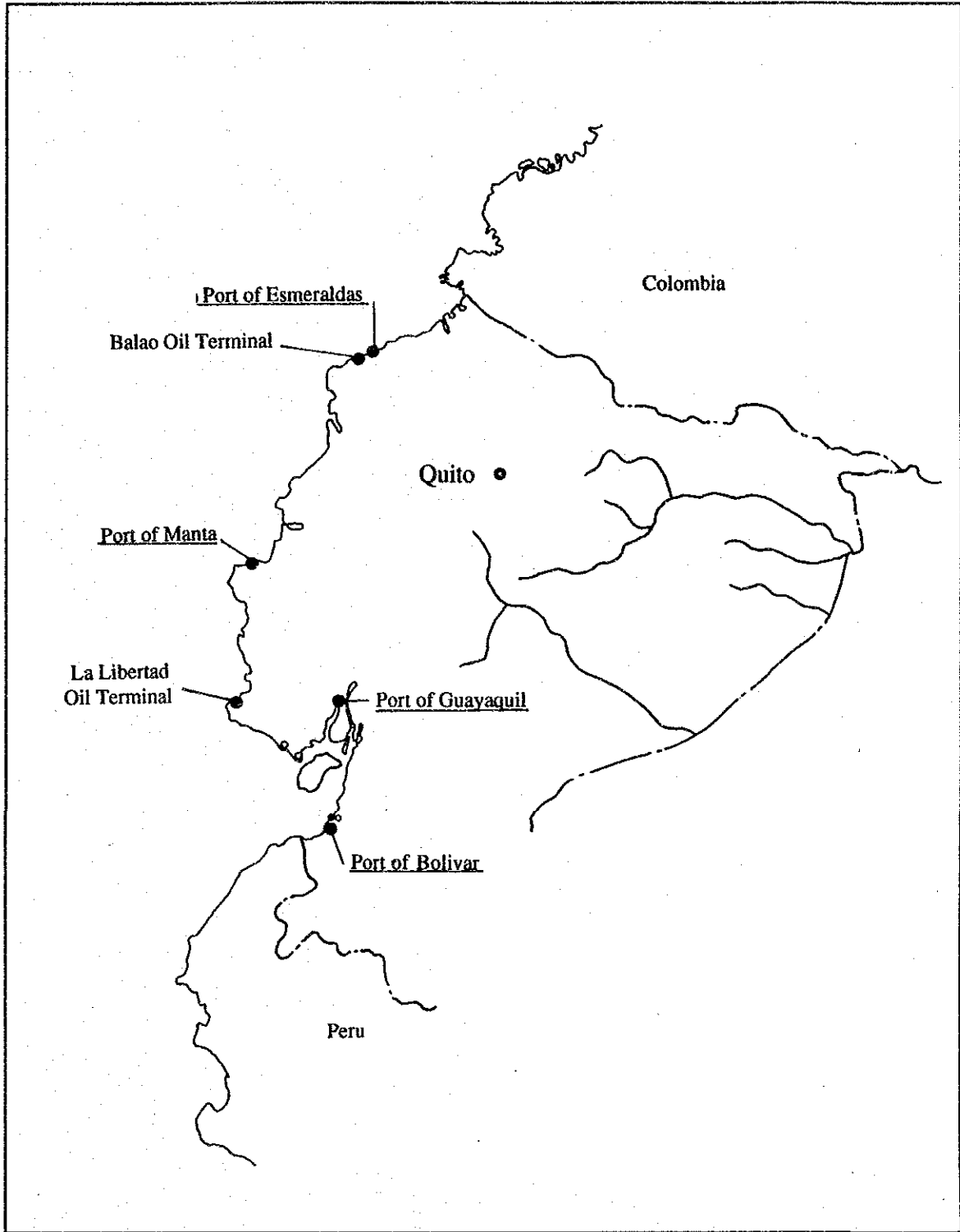


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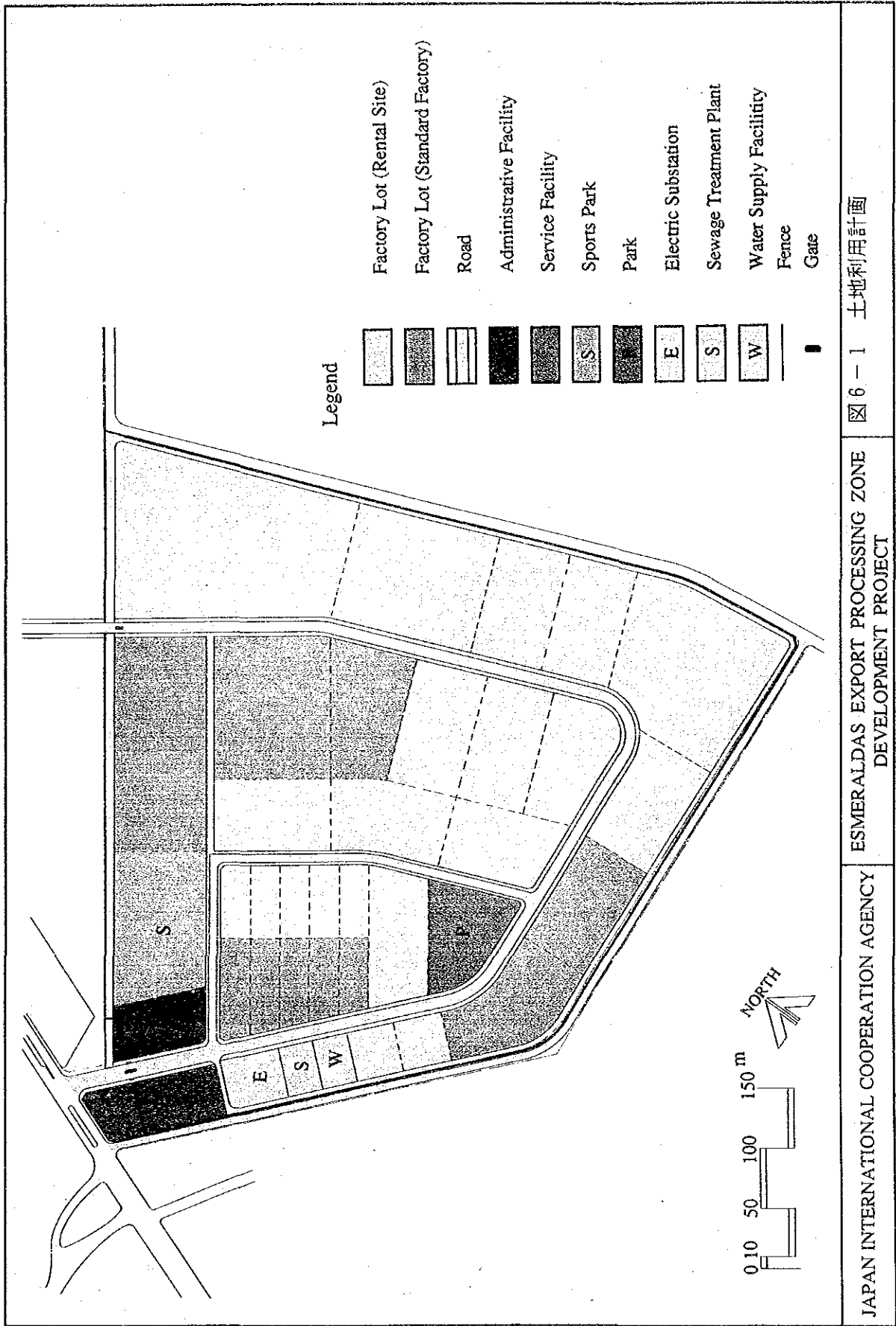
図 3-1

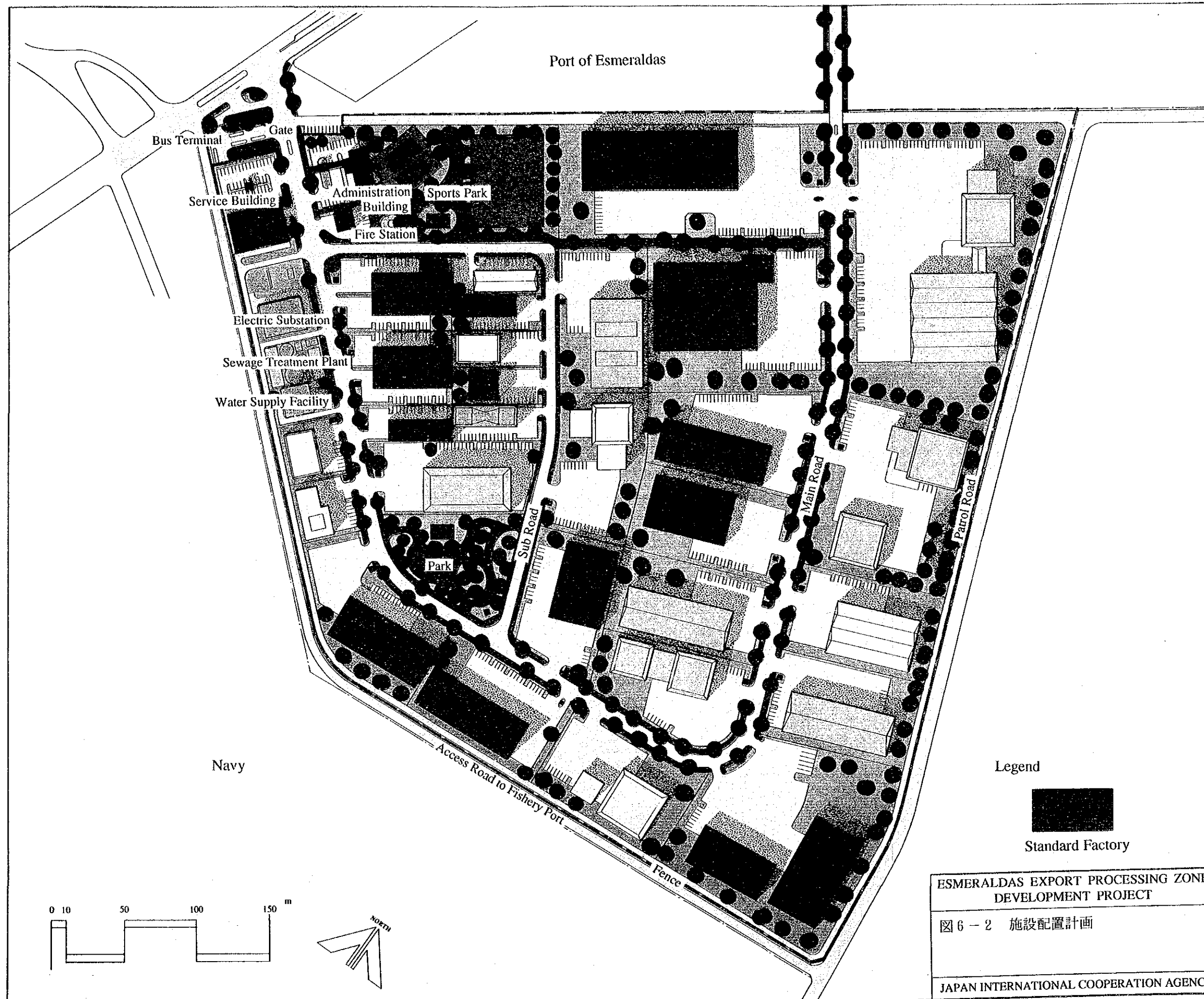
エクアドル国の道路網

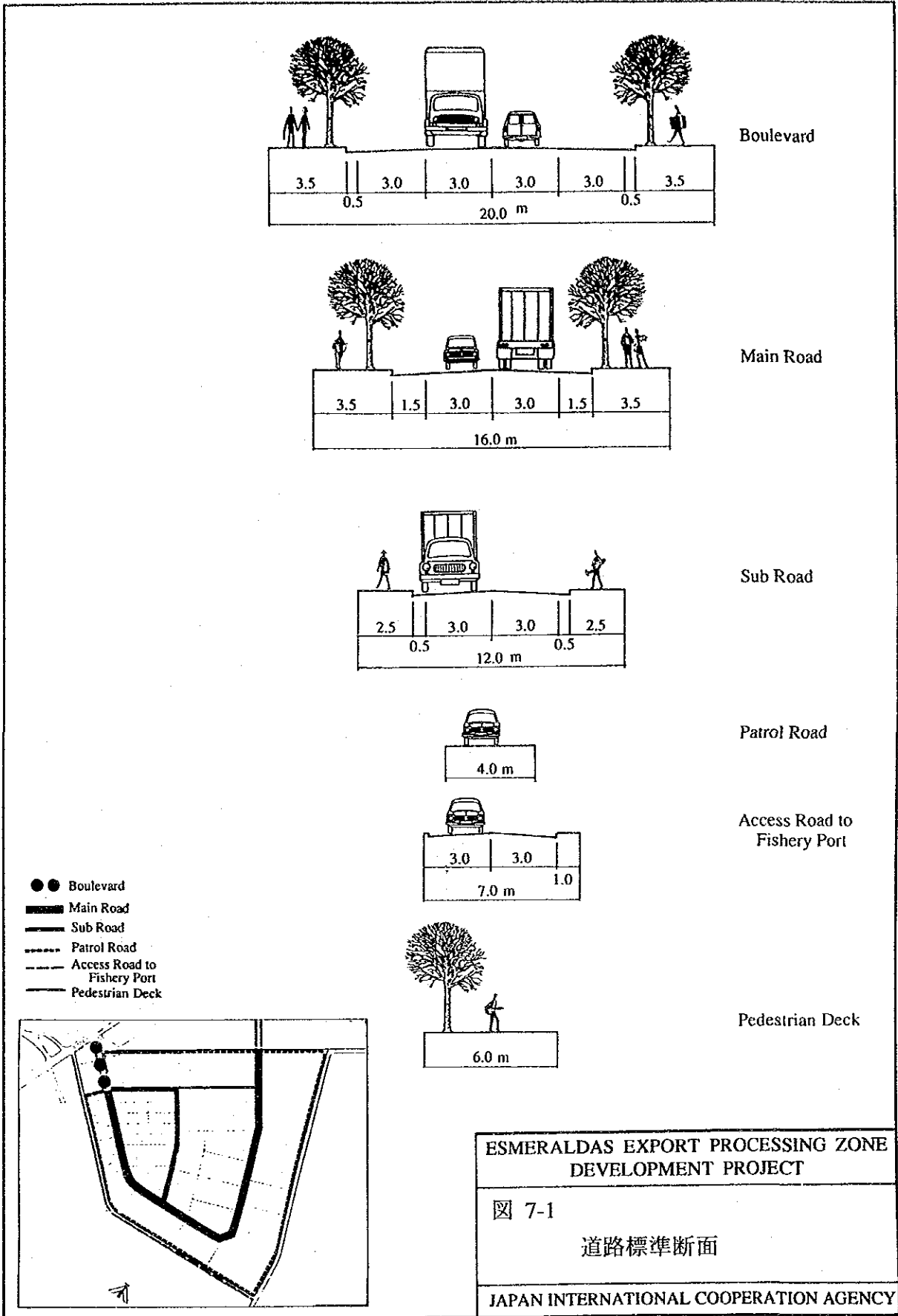
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		図 3-2 港湾の位置
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图 7-1

道路標準断面

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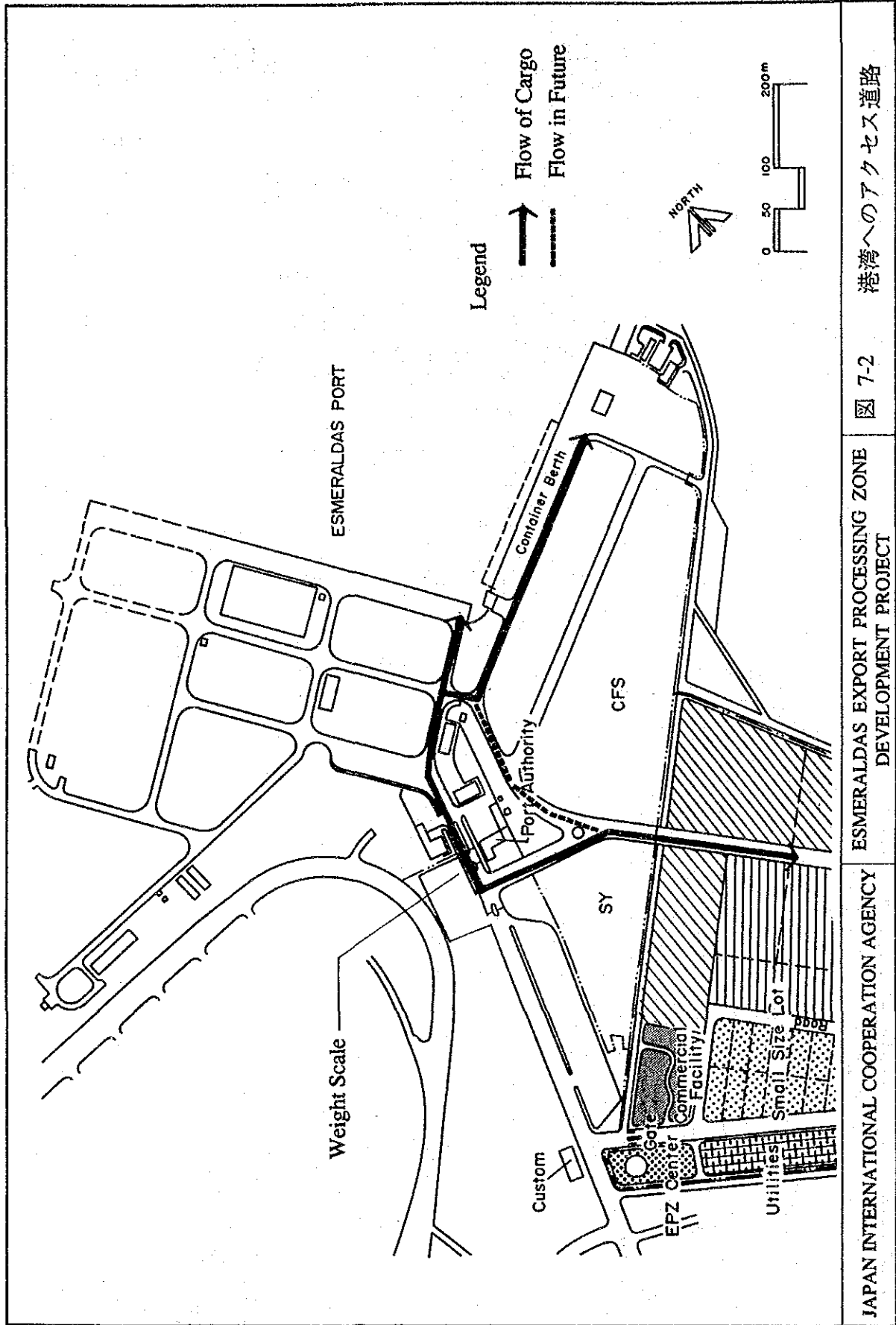
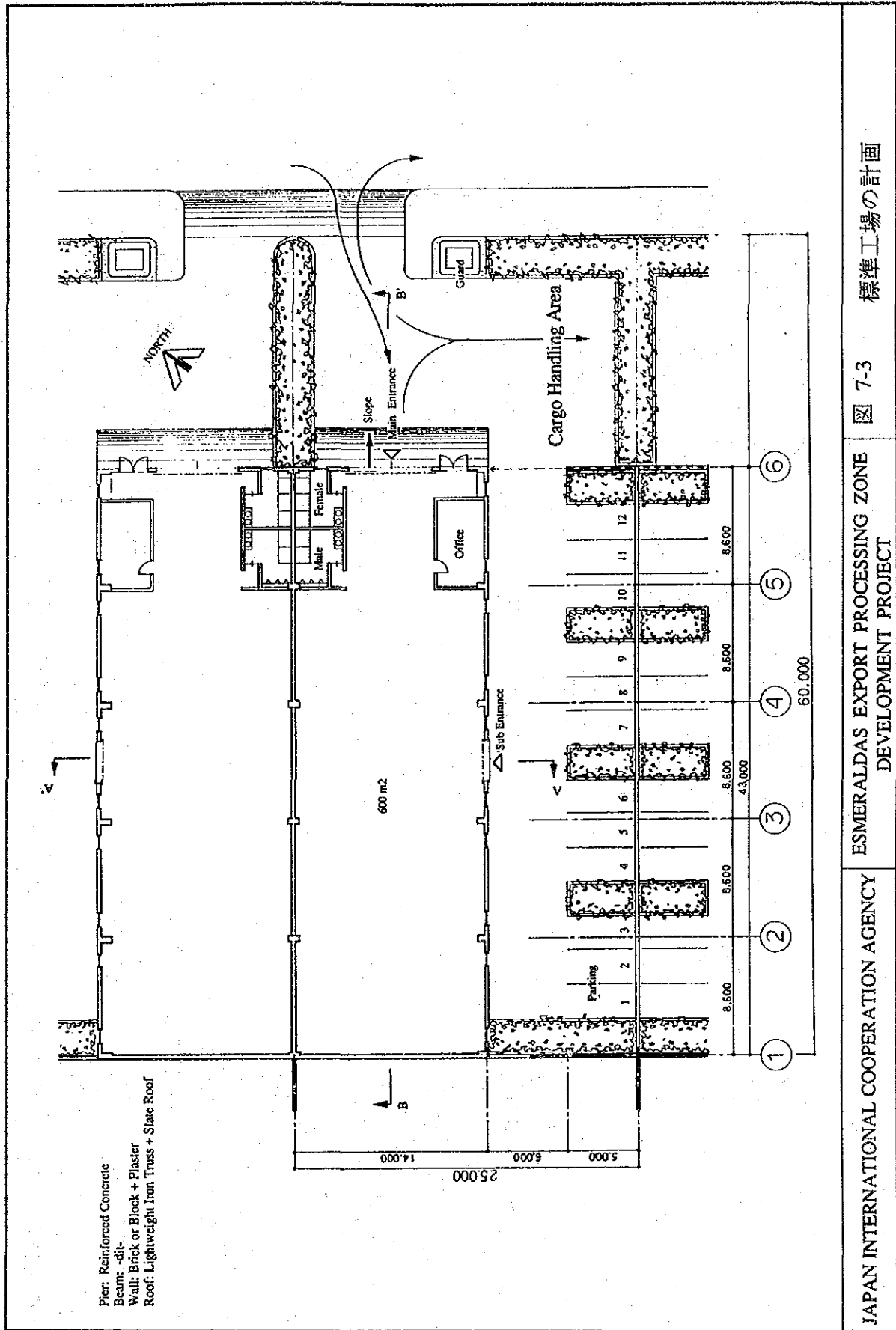


図 7-2 港湾へのアクセス道路

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標準工場の計画

図 7-3

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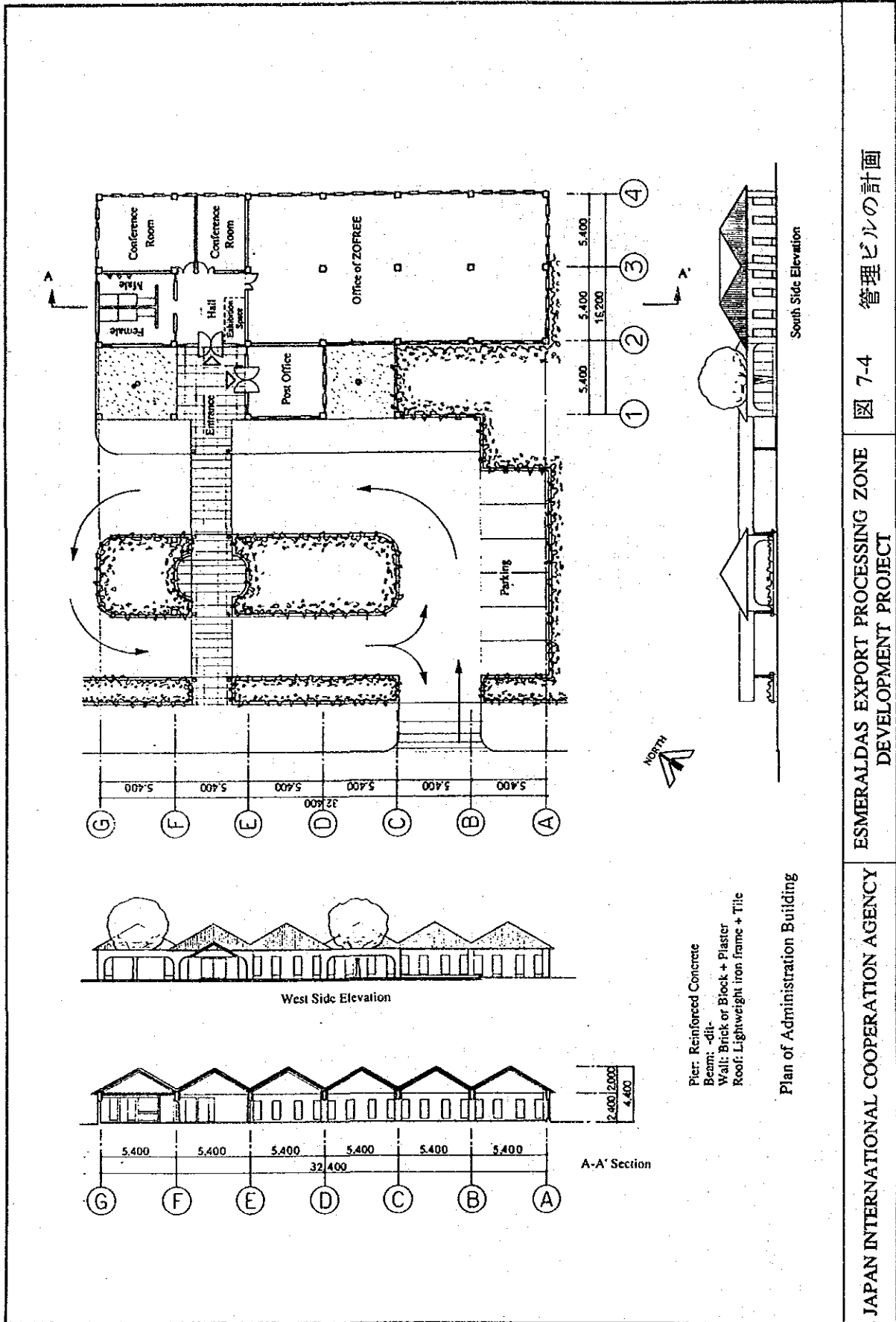


図 7-4 管理ビルの計画

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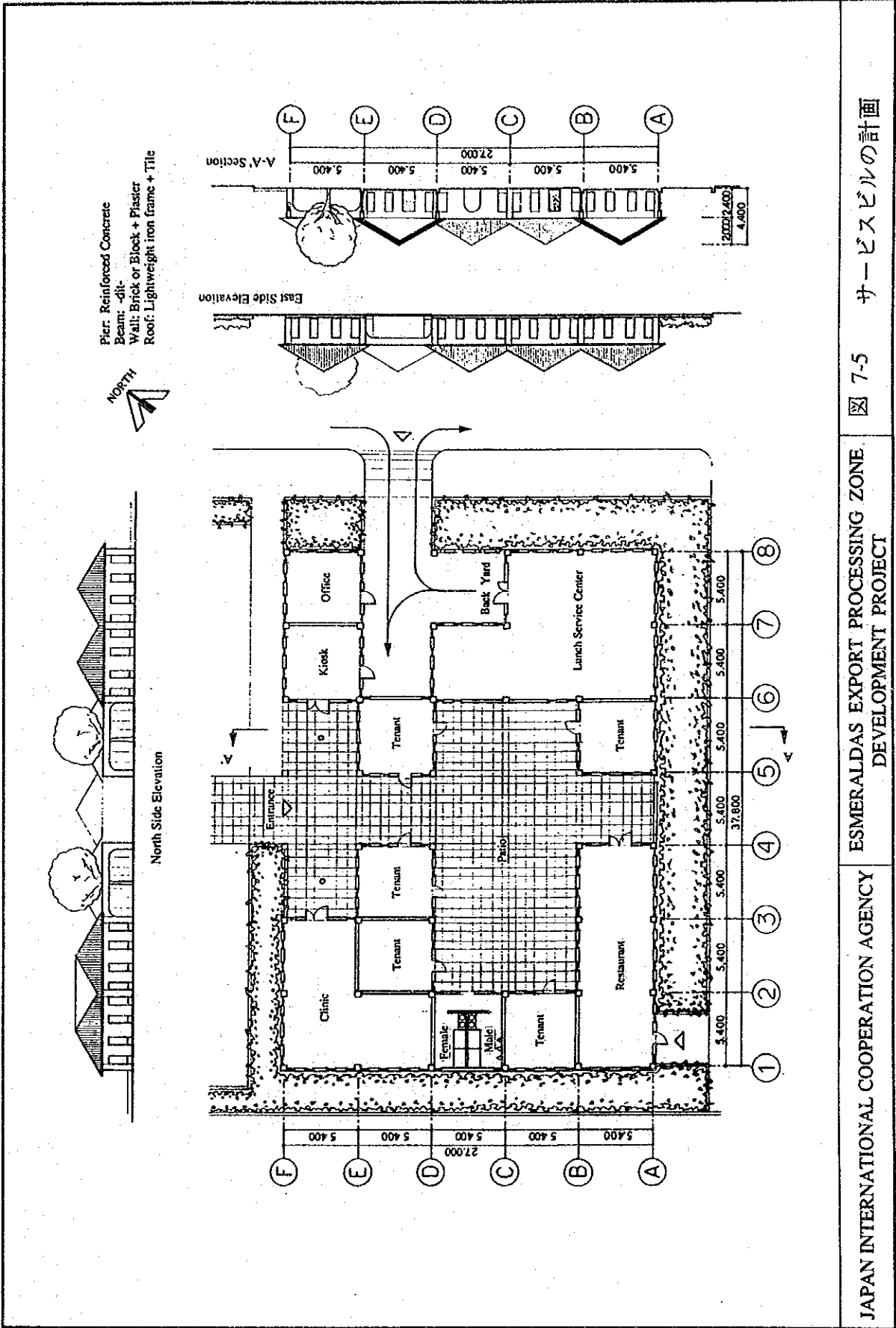
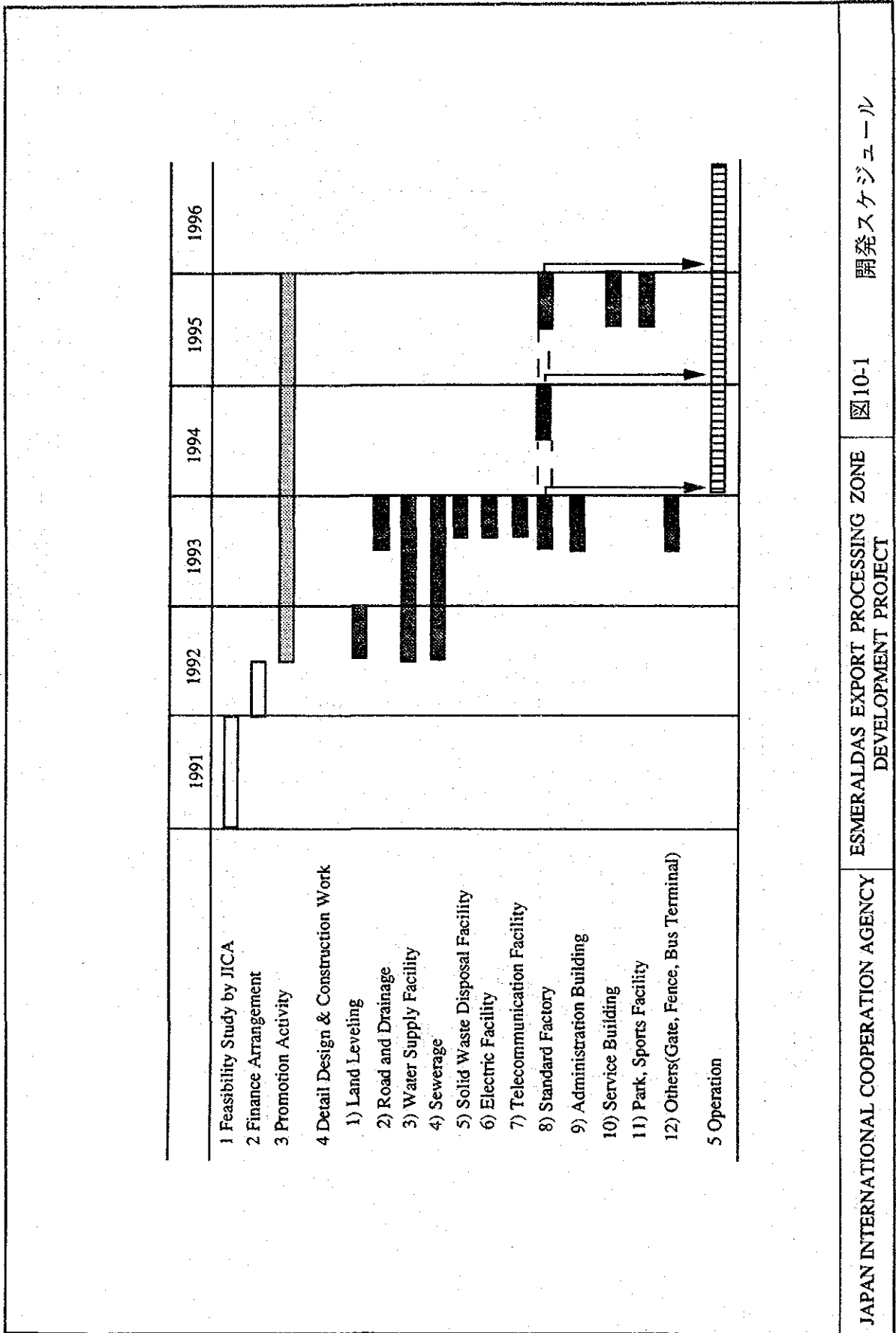


図 7-5 サービスビルの計画

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開発スケジュール

図10-1

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