Table 16.2.1-1 Standard Conversion Factor

(Unit: LE Billion)

	Item	1992	1993	1994	1995	1996
1.	Import (CIF)	27.7	27.6	32.5	39.9	44.2
2.	Export (FOB)	10.4	10.6	11.9	12.0	12.3
3.	Sub-total	38.0	38.1	44.4	51.8	56.5
4.	Tax on Foreign Trade *1	4.6	5.0	6.1	7.0	7.9
	Tax on Import *2	4.1	4.5	5.5	6.4	7.3
	Tax on Export *3	0.5	0.5	0.6	0.6	0.6
5.	Subsidies *1	7.2	4.0	3.3	3.8	4.3
	Subsidy for Export *4	0.4	0.2	0.2	0.2	0.2
6.	Total	41.9	42.3	49.5	57.9	63.4
7.	Standard Conversion Factor	0.91	0.90	0.90	0.90	0.89
	(SCF = (3)/(6)) ====> Average for five years					0.90

Source: Refer to Table 15.3.6-1, 15.3.6-2 and 15.5.1-1.

Note: *1 The figure in fiscal year 1991/92 was regarded as that in calendar year 1992.

*2 The tax duties were derives from the total foreign trade duties minus export duties.

*3 The tax duties were assumed to be 5% of the export amount.

*4 The portion for export promotion subsidy was assumed to be 5% of the total subsidies.

Table 16.2.2-1 Unit Water Value for Benefit Estimation: Plan 1

Item	Financial Value	Economic Value *4
I. Estimation of Unit Water Cost in 1997		
1. Data by SSDA through WRRI on April 16, 1998		
1) Capital Cost of Pipeline System from Suez to Abu Rudeis (LE Million)	55	47
2) Running Cost in 1997 (LE 1000/Year)		
a. Operation and Maintenance Cost:	45	41
b. Electricity Cost:	60	54
c. Depreciation and Consumption Cost:	47	42
d. Total	152	137
2. Calculation of Unit Water Cost		
1) Annual Cost		
a. Annualized Capital Cost		
- Capital Recovery Factor *1	0.110	0.110
- Capital Cost Annualized (LE 1000/Year)	6,059	5,223
b. Running Cost in 1997 (LE 1000/Year)	152	137
c. Total Cost (LE 1000/Year)	6,211	5,359
2) Water Volume Served to Consumers (m3/Year)	2,024	2,024
3) Unit Water Cost in 1997 (LE/m3)	3.07	2.65
a. Capital Portion	2.99	2.58
b. O/M Portion	0.08	0.07
II. Estimation of Unit Water Value during 25 Years		
1. Unit Water Cost of Capital Investment		
1) Annualized Capital Cost		
a. Existing Pipeline System from Suez to Abu Rudeis *2 (LE Million)	26	0
b. New Pipeline System from Suez to Abu Rudeis *2 (LE Million)	243	209
New Facilities for Incremental Water Demand to Meet Full Deman	516	
- Water Treatment Plant	93	
- Pumping Stations	59	
- New Pipeline (Suez-Abu Rudeis)	364	
c. Total of Both Pipeline System (LE Million)	268	209
d. Capital Recovery Factor *1	0.110	0.110
e. Capital Cost Annualized (LE 1000/Year)	29,573	23,034
2) Average Water Volume Served to Consumers for 25 years *3 (1000 m3/Year)	11,322	11,322
3) Unit Water Cost of Capital Portion (LE/m3)	2.61	2.03
2. Unit Water Cost of O/M Cost (LE/m3)	0.73	0.66
New Facilities for Incremental Water Demand	8,296	
a. Water Treatment Plant	7,076	
b. Pumping Stations	500	
c. New Pipeline (Suez-Abu Rudeis)	720	
3. Unit Water Cost (LE/m3)	3.34	2.69

Source: Data in Financial Terms by SSDA through WRRI in May 1998

Note: *1 Capital Recovery Factor (CRF) is calculated on condition that an economic life (n) is 25 years and an interest rate (r) is 10%.
Hence, CRF = r/(1-1/(1+r)^n)

*2 The portion of three cities is estimated as 47% of the total construction cost (LE240 million) on the basis of the water demand ratio until the target year.

*3 Estimation of water demand in the three cities for 25 years between 1997 and 2022

*4 The following conversion factors are applied:
Construction works: 0.86, referring to the conversion factor in Table 16.2.3-1
O/M costs: 0.90 of SCF

Table 16.2.2-2 Unit Water Value for Benefit Estimation: Plan 2

Item	Financial Value	Economic Value
1. Unit Water Cost of Capital Investment		
1) Annualized Capital Cost		
a. Desalination System of Reverse Osmosis Method (US$ per m3/day) *1	1,300	1,261
b. Capital Recovery Factor *2	0.110	0.110
c. Capital Cost Annualized (US$ per m3/day per year)	143	139
2) Unit Water Cost of Capital Portion (US$/m3) *3	0.39	0.38
3) Unit Water Cost of Capital Portion (LE/m3)	1.53	1.48
2. Unit Water Cost of Operation and Maintenance		
1) Unit Water Cost of O/M (US$/m3)	0.70	0.63
2) Unit Water Cost of O/M (LE/m3)	2.73	2.46
3. Unit Water Cost (LE/m3)		
1) Unit Water Cost (US$/m3)	1.09	1.01
2) Unit Water Cost (LE/m3)	4.26	3.94

Note: *1 The estimate of the desalination system is quoted from Japanese examples.
The constitution of the construction cost is assumed to comprise 70% of foreign portion and 30% of local portion. For conversion to economic value, the SCF of 0.9 is applied to local portion.
*2 CRF is calculated on condition that an economic life (n) is 25 years and a rate (r) is 10%.
Hence, CRF = r/(1-1/(1+r)^n)
*3 The capacity of the system is 365 m3 per year.

Reference: Features of Reverse Osmosis Method

1) Treatment Process	Raw water → Sand filter → Check filter → RO unit → Disinfection → Treated water
2) Special Features	Less-energy consumption than other systems such as Electro-dialysis (EDR) and Multi-Stage Flash (MSF) Developed in USA and Japan Good for middle-sized plants Suitable for desalination of sea water and river/ground water High rate of water recovery
3) Application to Large-Scale Facility	Applicable by increasing the number of units Standard capacity of each unit = 3,000 - 3,500 m3/day Plants with capacity above 50,000 m3/day exist in Middle-East
4) Productivity	70-80% of water recovery
5) Electric power consumption	About 1.5 kwh/m3
6) Development and application	Since 1965 For both brackish and sea water 2,000,000 m3/day capacity plants are in operation in the world 25% of desalination plants in the world are of this type.
7) Maintenance of Equipment	Membrane
8) Environmental Concerns	Disposal of concentrated saline water into sea
9) Construction Cost	About US$1,300 per m3/day for desalination equipment
10) Running Cost	US$0.60 - 0.80 per m3 of treated water
11) Overall Judgement	Recommended

Table 16.2.2-3 Unit Water Value for Benefit Estimation: Plan 3

Item	Financial Value	Economic Value *4
I. Estimation of Unit Water Cost in 1997 (Refer to Table 16.2.2-1)		
1. Unit Water Cost in 1997 (LE/m3)	3.07	2.62
1) Capital Portion	2.99	2.55
2) O/M Portion	0.08	0.07
II. Estimation of Unit Water Value during 25 Years		
1. Unit Water Cost of Capital Investment		
1) Capital Investment Cost		
a. Existing Pipeline System from Suez to Abu Rudeis *2(LE Million)	55	47
b. New Pipeline System from Suez to Abu Rudeis *2 (LE Million)	516	440
c. New Pipeline System from Abu Rudeis to Sharm El Shiekh (LE M.)	77	66
2) Annualized Capital Cost		
a. Existing Pipeline System from Suez to Abu Rudeis *2(LE Million)	0	0
b. New Pipeline System from Suez to Abu Rudeis *2 (LE Million)	115	98
c. New Pipeline System from Abu Rudeis to Sharm El Shiekh (LE M.)	33	28
d. Total of Both Pipeline System (LE Million)	147	126
e. Capital Recovery Factor *1	0.110	0.110
f. Capital Cost Annualized (LE 1000/Year)	16,241	13,851
3) Average Water Volume Served to Consumers for 25 years *3 (1000 m3/year)	5,984	5,984
4) Unit Water Cost of Capital Portion (LE/m3)	2.71	2.31
2. Unit Water Cost of O/M Cost (LE/m3)*5	0.73	0.66
3. Unit Water Cost (LE/m3)	3.44	2.97

Source: Data in Financial Terms by SSDA through WRRI in May 1998

Note: *1 CRF is calculated on condition that an economic life (n) is 25 years and a rate (r) is 10%.
Hence, CRF = r/(1-1/(1+r)^n)

*2 The total costs of the original pipeline and the new pipeline between Suez and Abu Rudeis are estimated at LE55 million and LE516 million, respectively. The new pipeline between Abu Rudeis and El Tur is estimated at LE50 million.
The portion of El Tur City is estimated as 22% of the construction cost between Suez and Sharm El Sheikh and 42% of the new pipeline cost between Abu Rudeis and Sharm El Sheikh on the basis of the water demand ratio.

*3 Estimation of water demand in the three cities for 25 years between 1997 and 2022

*4 The following conversion factors are applied:
Construction works: 0.85, referring to the conversion factor in Table 16.2.3-1
O/M costs: 0.90 of SCF

*5 Refer to Table 16.2.2-1

Table 16.2.2-4 Economic Farmgate Price of Tradable Commodities: 1998

Item	Import Parity Price		Export Parity Price			
	Wheat		Orange		Tomato	
	US$/ton	LE/ton	US$/ton	LE/ton	US$/ton	LE/ton
1. 1998 FOB Price *1	148		499			
2. Ocean Freight and Insurance *2	19		65			
3. CIF Value at Said Port	167					
4. FOB Value at Said Port *3			564		288	
5. Conversion to Local Currency *4		565		1,906		973
6. Port Handling Charge, etc.		32		32		32
7. Wastage and Losses *5		17		57		29
8. Trader's Charge *6		28		95		49
9. Price of Ex-port at Said *7		642		1,721		864
10. Inland Transportation *8		60		60		60
11. Wholesaler Charge *9		64		172		86
12. Market Price in El Tur *10		767		1,489		717
13. Treatment Cost *11		77		223		143
14. Transport and Handling *12		5		5		5
15. Farmgate Price		686		1,261		569
Round Farmgate Price		690		1,260		570

Source 1. Commodity Markets and the Developing Countries, February 1996, World Bank
2. The Feasibility Study on the North Sinai Integrated Rural Development Project (Phase II), March 1997,

Note: *1 Quoted from Source 1
*2 13% of FOB price
*3 Quoted from Source 2
*4 Exchange rate: LE3.38 per US$
*5 3% of CIF value
*6 5% of CIF value
*7 Sum of (5), (6), (7) and (8) for the case of import
Difference of (5) minus (6), (7) and (8) for the case of export
*8 400 km (from Said Port to El Tur) x LE0.15/ton-km
*9 10% of Ex-port value
*10 Sum of (9), (10) and (11) for the case of import
Difference of (5) minus (6), (7) and (8) for the case of export
*11 Cost of post-harvest activities and processing.
In the case of rice, milling loss is assumed at 10% of wheat, so 10% of the wholesale price is equivalent to loss from wheat.
In the case of tomato, loss due to quality adjustment, post-harvesting, grading and packing is assumed at 20% of raw tomato, so 20% of the wholesale price is equivalent to loss from raw tomato.
In the case of orange, loss due to quality adjustment, post-harvesting, grading and packing is assumed at 15% of raw orange, so 15% of the wholesale price is equivalent to loss from raw orange.
*12 30km (from market to farmgate) x LE0.15/ton-km

Table 16.2.2-5 Annual Production Cost under With-Project Condition

(Unit: LE/Feddan)

Crop		Price Category	Input			Machinery	Labour *3	Others	Total
			Seed	Fertilizer	Agro-chemicals				
1. Wheat		Financial	86	184	63	600	32	0	965
		Economic	86	193	63	900	19	0	1,262
2. Barley		Financial	32	115	63	96	29	0	336
		Economic	32	121	63	144	17	0	378
3. Tomato		Financial	1,120	926	422	2,360	1,531	2,240	8,600
		Economic	1,120	973	422	3,540	919	2,016	8,989
4. Watermelon		Financial	56	249	403	1,206	1,395	336	3,645
		Economic	56	261	403	1,809	837	302	3,669
5. Olive	Initial Investment	Financial	672	25	605	39	430	0	1,771
		Economic	672	26	605	59	258	0	1,620
	Maintenance	Financial	0	326	605	319	389	0	1,639
		Economic	0	342	605	479	233	0	1,659
6. Orange	Initial Investment	Financial	672	74	258	39	232	0	1,275
		Economic	672	78	258	59	139	0	1,205
	Maintenance	Financial	0	172	258	337	339	0	1,107
		Economic	0	181	258	506	204	0	1,148

Source: (1) Statistical Information through South Sinai Office Manager of WRRI, February 1998, MOI
(2) Feasibility Study on North Sinai Integrated Rural Development Project (Phase II), March 1997, JICA

Note: *1 All prices in 1996 are converted applying a wholesale price increase of 1.12 between 1996 and 1998.
*2 Conversion factors from financial cost to economic cost are assumed as follows referring to the above source (2).
Seed: 1.00, Fertilizers: 1.05, Agro-chemicals: 1.00, Machinery: 1.50, Labour: 0.60 and Other Costs: SCF(0.90)
*3 Including family labour

Table 16.2.2-6 Crop Budget at Matured Stage in Economic Terms

	Crop	Stage	Yield (ton/feddan)	Farmgate Price (LE/ton)	Gross Income (LE/feddan)	Production Cost (LE/feddan)	Net Income (LE/feddan)
Financial Terms							
1.	Wheat	*1	2.5	690	1,725	965	760
2.	Barley	*1	1.5	410	615	336	279
3.	Tomato	*1	40.0	450	18,000	8,600	9,400
4.	Watermelon	*1	10.0	570	5,700	3,645	2,055
5.	Olive	Initial Investment	0.0	1430	0	1,771	-1,771
		Maintenance	7.0	1430	10,010	1,639	8,371
6.	Orange	Initial Investment	0.0	480	0	1,275	-1,275
		Maintenance	7.4	480	3,552	1,107	2,445
Economic Terms							
1.	Wheat	*1	2.5	690	1,725	1,262	463
2.	Barley	*1	1.5	370	555	378	177
3.	Tomato	*1	40.0	570	22,800	8,989	13,811
4.	Watermelon	*1	10.0	510	5,100	3,669	1,431
5.	Olive	Initial Investment	0.0	1,280	0	1,620	-1,620
		Maintenance	7.0	1,280	8,960	1,659	7,301
6.	Orange	Initial Investment	0.0	1,260	0	1,205	-1,205
		Maintenance	7.4	1,260	9,324	1,148	8,176

Note: *1 It is assumed to need five years for the crop to attain the matured yield.
*2 It is assumed to need four years for the crop to come into bearing. Moreover, It is assumed to need five years for the crop to attain the matured yield.

Table 16.2.2-7 Unit Economic Benefit of Irrigation Scheme

Item	Wheat	Barley	Tomato	Watermelon	Olive	Orange	Total	Unit Benefit (LE/feddan)
1. Unit of Net Income (LE/feddan)								
Maintenance	463	177	13,811	1,431	7,301	8,176	-	-
Initial Investment	-	-	-	-	-1,620	-1,205	-	-
2. Total Area (feddan)	25	20	15	15	15	10	100	-
3. Total Cropped Area (feddan)	50	40	30	30	15	15	180	-
4. Net Income (LE1000) at Matured Stage	23,160	7,069	414,317	42,930	109,515	122,640	719,631	-
5. Annual Benefit *2								
1st Year	4,632	1,414	82,863	8,586	-24,293	-18,077	55,126	306
2nd Year	9,264	2,828	165,727	17,172	-14,213	-7,997	172,781	960
3rd Year	13,896	4,241	248,590	25,758	-14,213	-7,997	270,276	1,502
4th Year	18,528	5,655	331,453	34,344	-14,213	-7,997	367,771	2,043
5th Year	23,160	7,069	414,317	42,930	21,903	24,528	533,907	2,966
6th Year	23,160	7,069	414,317	42,930	43,806	49,056	580,338	3,224
7th Year	23,160	7,069	414,317	42,930	65,709	73,584	626,769	3,482
8th Year	23,160	7,069	414,317	42,930	87,612	98,112	673,200	3,740
9th Year	23,160	7,069	414,317	42,930	109,515	122,640	719,631	3,998
10th Year	23,160	7,069	414,317	42,930	109,515	122,640	719,631	3,998

Note: *1 Cropping intensity is assumed at 180%. Cropping system is set up referring to the system in the North Sinai irrigation scheme.
*2 It is assumed to need five years for the crop to attain the matured yield.
It is assumed to need four years for the crop to come into bearing. Moreover, It is assumed to need five years for the crop to attain the matured yield.

Table 16.2.3-1 Financial Cost and Economic Cost

Item	Plan 1	Plan 2	Plan3	Plan 4A	Plan 4B	Plan 4C
Financial Terms						
I. Construction Cost (LE Million)	**461.5**	**535.8**	**17.0**	**74.5**	**86.3**	**74.5**
A. Direct Cost	364.9	423.6	13.5	58.9	68.2	58.9
1. Wells	261.3	159.1	5.8	54.0	62.5	54.0
2. Collection Pipeline	23.2	15.6	2.5	1.3	1.5	1.3
3. Pumping Station	7.1	24.4	0.0	0.0	0.0	0.0
4. Surge Tank	0.0	0.1	0.0	0.0	0.0	0.0
5. Pressure Reduce Tank	0.8	1.2	0.1	0.0	0.0	0.0
6. Conveyance Pipeline	66.9	220.4	4.2	0.0	0.0	0.0
7. Distribution Reservoir	5.6	2.8	0.8	3.7	4.3	3.7
B. Administration Cost	18.2	21.2	0.7	2.9	3.4	2.9
C. Engineering	18.2	21.2	0.7	2.9	3.4	2.9
D. Physical Contingency	60.2	69.9	2.2	9.7	11.3	9.7
II. O/M Cost						
(LE 1000/Year in Matured Year)	**11,600**	**15,060**	**412**	**2,139**	**2,529**	**2,139**
A. Salary and Wages	51	113	6	6	6	6
1. Engineer	2	3	0	0	0	0
2. Technician	16	34	1	1	1	1
3. Workers	34	77	5	5	5	5
B. Pumping Operation	10,502	13,561	340	1,892	2,247	1,892
1. Submersible Pumps	9,461	5,677	340	1,892	2,247	1,892
2. Other Pumps	1,041	7,884	0	0	0	0
C. Transportation	7	13	2	2	2	2
D. Maintenance	1,037	1,368	63	238	274	238
E. Administration & General Cost	3	6	0	0	0	0
Economic Terms						
I. Construction Cost (LE Million)	**397.8**	**456.5**	**14.5**	**64.4**	**74.6**	**64.4**
A. Direct Cost	314.5	360.9	11.5	50.9	59.0	50.9
1. Wells	227.4	138.4	5.1	47.0	54.4	47.0
2. Collection Pipeline	19.5	13.1	2.1	1.1	1.2	1.1
3. Pumping Station	6.4	21.0	0.0	0.0	0.0	0.0
4. Surge Tank	0.0	0.1	0.0	0.0	0.0	0.0
5. Pressure Reduce Tank	0.6	0.9	0.1	0.0	0.0	0.0
6. Conveyance Pipeline	56.2	185.1	3.6	0.0	0.0	0.0
7. Distribution Reservoir	4.4	2.2	0.6	2.9	3.3	2.9
B. Administration Cost	15.7	18.0	0.6	2.5	2.9	2.5
C. Engineering	15.7	18.0	0.6	2.5	2.9	2.5
D. Physical Contingency	51.9	59.5	1.9	8.4	9.7	8.4
II. O/M Cost						
(LE 1000/Year in Matured Year)	**10,434**	**13,485**	**369**	**1,923**	**2,275**	**1,923**
A. Salary and Wages	36	36	4	4	4	4
1. Engineer	1	1	0	0	0	0
2. Technician	14	14	1	1	1	1
3. Workers	20	20	3	3	3	3
B. Pumping Operation	9,457	12,205	306	1,703	2,022	1,703
1. Submersible Pumps	8,515	5,109	306	1,703	2,022	1,703
2. Other Pumps	942	7,096	0	0	0	0
C. Transportation	6	11	2	2	2	2
D. Maintenance	933	1,231	57	214	247	214
E. Administration & General Cost	2	2	0	0	0	0
Ratio of Economic Construction Cost to Financial construction Cost	**86%**	**85%**	**85%**	**86%**	**86%**	**86%**

Note: Labour rates of "Direct Cost" is set as 0.1 for Item 1; 0.2 for Items 2,3 & 6; and 0.4 for others.

Table 16.2.4-1 Economic Cost and Benefit: Plan 1

(Unit: LE1000)

Serial Year	Year	Cost				Benefit	Balance
		Construction	O&M	Replace.	Total		
1	1999	4,021	0	0	4,021	0	-4,021
2	2000	4,021	0	0	4,021	0	-4,021
3	2001	77,982	0	0	77,982	0	-77,982
4	2002	77,982	0	0	77,982	0	-77,982
5	2003	77,982	0	0	77,982	0	-77,982
6	2004	49,190	5,317	0	54,508	4,502	-50,005
7	2005	0	6,349	0	6,349	6,261	-88
8	2006	0	6,787	0	6,787	8,441	1,654
9	2007	33,097	7,224	0	40,322	11,141	-29,180
10	2008	33,097	7,662	0	40,759	13,290	-27,469
11	2009	0	8,099	0	8,099	15,764	7,664
12	2010	0	8,537	0	8,537	18,613	10,077
13	2011	0	8,974	0	8,974	21,896	12,922
14	2012	20,223	9,412	0	29,635	25,678	-3,957
15	2013	20,223	9,849	0	30,073	30,146	73
16	2014	0	10,287	0	10,287	35,313	25,026
17	2015	0	10,724	0	10,724	41,287	30,563
18	2016	0	11,162	0	11,162	48,197	37,035
19	2017	0	10,434	0	10,434	56,189	45,755
20	2018	0	10,434	35,037	45,471	56,189	10,718
21	2019	0	10,434	0	10,434	56,189	45,755
22	2020	0	10,434	0	10,434	56,189	45,755
23	2021	0	10,434	0	10,434	56,189	45,755
24	2022	0	10,434	0	10,434	56,189	45,755
25	2023	0	10,434	10,020	20,454	56,189	35,735
26	2024	0	10,434	0	10,434	56,189	45,755
27	2025	0	10,434	0	10,434	56,189	45,755
28	2026	0	10,434	0	10,434	56,189	45,755
29	2027	0	10,434	0	10,434	56,189	45,755
30	2028	0	10,434	6,012	16,446	56,189	39,743
31	2029	0	10,434	0	10,434	56,189	45,755
32	2030	0	10,434	0	10,434	56,189	45,755
33	2031	0	10,434	0	10,434	56,189	45,755
34	2032	0	10,434	0	10,434	56,189	45,755
35	2033	0	10,434	35,037	45,471	56,189	10,718
36	2034	0	10,434	0	10,434	56,189	45,755
37	2035	0	10,434	0	10,434	56,189	45,755
38	2036	0	10,434	0	10,434	56,189	45,755
39	2037	0	10,434	0	10,434	56,189	45,755
40	2038	0	10,434	10,020	20,454	91,571	71,117

NPV: -124,298 B/C: 0.57 EIRR : 5.2%

Table 16.2.4-2 Economic Cost and Benefit: Plan 2

(Unit: LE1000)

Serial Year	Year	Cost				Benefit	Balance
		Construction	O&M	Replace.	Total		
1	1999	3,774	0	0	3,774	0	-3,774
2	2000	3,774	0	0	3,774	0	-3,774
3	2001	49,850	0	0	49,850	0	-49,850
4	2002	82,795	0	0	82,795	0	-82,795
5	2003	82,795	0	0	82,795	0	-82,795
6	2004	82,795	0	0	82,795	0	-82,795
7	2005	82,795	0	0	82,795	0	-82,795
8	2006	0	10,497	0	10,497	10,890	393
9	2007	22,301	10,768	0	33,069	12,697	-20,372
10	2008	22,301	11,040	0	33,341	14,613	-18,727
11	2009	0	11,312	0	11,312	16,766	5,455
12	2010	0	11,583	0	11,583	19,185	7,602
13	2011	0	11,855	0	11,855	21,905	10,050
14	2012	0	12,126	0	12,126	24,963	12,836
15	2013	11,658	12,398	0	24,056	28,694	4,639
16	2014	11,658	12,670	0	24,327	32,943	8,616
17	2015	0	12,941	0	12,941	37,781	24,840
18	2016	0	13,213	0	13,213	43,293	30,081
19	2017	0	13,485	0	13,485	49,574	36,090
20	2018	0	13,485	0	13,485	49,574	36,090
21	2019	0	13,485	0	13,485	49,574	36,090
22	2020	0	13,485	35,315	48,800	49,574	774
23	2021	0	13,485	0	13,485	49,574	36,090
24	2022	0	13,485	0	13,485	49,574	36,090
25	2023	0	13,485	6,012	19,497	49,574	30,078
26	2024	0	13,485	0	13,485	49,574	36,090
27	2025	0	13,485	0	13,485	49,574	36,090
28	2026	0	13,485	0	13,485	49,574	36,090
29	2027	0	13,485	0	13,485	49,574	36,090
30	2028	0	13,485	0	13,485	49,574	36,090
31	2029	0	13,485	3,507	16,992	49,574	32,583
32	2030	0	13,485	0	13,485	49,574	36,090
33	2031	0	13,485	0	13,485	49,574	36,090
34	2032	0	13,485	0	13,485	49,574	36,090
35	2033	0	13,485	0	13,485	49,574	36,090
36	2034	0	13,485	0	13,485	49,574	36,090
37	2035	0	13,485	35,315	48,800	49,574	774
38	2036	0	13,485	0	13,485	49,574	36,090
39	2037	0	13,485	0	13,485	49,574	36,090
40	2038	0	13,485	6,012	19,497	49,574	30,078
41	2039	0	13,485	0	13,485	82,252	68,768

NPV: -180,856 B/C: 0.45 EIRR : 3.3%

Table 16.2.4-3 Economic Cost and Benefit: Plan 3

(Unit: LE1000)

Serial Year	Year	Cost				Benefit	Balance
		Construction	O&M	Replace.	Total		
1	1999	330	0	0	330	0	-330
2	2000	11,217	0	0	11,217	0	-11,217
3	2001	0	183	0	183	1,435	1,252
4	2002	0	194	0	194	1,853	1,658
5	2003	2,978	206	0	3,184	2,500	-684
6	2004	0	218	0	218	3,208	2,990
7	2005	0	229	0	229	3,981	3,752
8	2006	0	241	0	241	4,826	4,586
9	2007	0	253	0	253	5,750	5,498
10	2008	0	264	0	264	5,750	5,486
11	2009	0	276	0	276	5,750	5,474
12	2010	0	287	0	287	5,750	5,463
13	2011	0	299	0	299	5,750	5,451
14	2012	0	311	0	311	5,750	5,439
15	2013	0	322	1,200	1,522	5,750	4,228
16	2014	0	334	0	334	5,750	5,416
17	2015	0	346	0	346	5,750	5,404
18	2016	0	357	600	957	5,750	4,793
19	2017	0	369	0	369	5,750	5,381
20	2018	0	369	0	369	5,750	5,381
21	2019	0	369	0	369	5,750	5,381
22	2020	0	369	0	369	5,750	5,381
23	2021	0	369	0	369	5,750	5,381
24	2022	0	369	0	369	5,750	5,381
25	2023	0	369	0	369	5,750	5,381
26	2024	0	369	0	369	5,750	5,381
27	2025	0	369	0	369	5,750	5,381
28	2026	0	369	0	369	5,750	5,381
29	2027	0	369	0	369	5,750	5,381
30	2028	0	369	1,200	1,569	7,070	5,501

NPV: 19,672 B/C: 2.41 EIRR : 24.0%

Table 16.2.4-4 Economic Cost and Benefit: Plan 4A

(Unit: LE1000)

Serial Year	Year	Cost				Benefit	Balance
		Construction	O&M	Replace.	Total		
1	1999	1,171	0	0	1,171	0	-1,171
2	2000	35,698	0	0	35,698	0	-35,698
3	2001	0	1,012	0	1,012	219	-793
4	2002	0	1,012	0	1,012	687	-325
5	2003	0	1,012	0	1,012	1,075	63
6	2004	0	1,012	0	1,012	1,462	450
7	2005	15,266	1,012	0	16,278	2,233	-14,045
8	2006	0	1,518	0	1,518	2,651	1,133
9	2007	0	1,518	0	1,518	3,030	1,512
10	2008	0	1,518	0	1,518	3,408	1,890
11	2009	0	1,518	0	1,518	3,923	2,405
12	2010	12,300	1,518	0	13,819	4,103	-9,715
13	2011	0	1,923	0	1,923	4,383	2,460
14	2012	0	1,923	0	1,923	4,630	2,707
15	2013	0	1,923	0	1,923	4,878	2,954
16	2014	0	1,923	0	1,923	5,142	3,219
17	2015	0	1,923	5,010	6,933	5,216	-1,718
18	2016	0	1,923	0	1,923	5,289	3,366
19	2017	0	1,923	0	1,923	5,363	3,440
20	2018	0	1,923	0	1,923	5,437	3,514
21	2019	0	1,923	0	1,923	5,437	3,514
22	2020	0	1,923	7,515	9,438	5,437	-4,001
23	2021	0	1,923	0	1,923	5,437	3,514
24	2022	0	1,923	0	1,923	5,437	3,514
25	2023	0	1,923	0	1,923	5,437	3,514
26	2024	0	1,923	0	1,923	5,437	3,514
27	2025	0	1,923	9,519	11,442	5,437	-6,005
28	2026	0	1,923	0	1,923	5,437	3,514
29	2027	0	1,923	0	1,923	5,437	3,514
30	2028	0	1,923	0	1,923	5,437	3,514
31	2029	0	1,923	0	1,923	5,437	3,514
32	2030	0	1,923	5,010	6,933	5,437	-1,496
33	2031	0	1,923	0	1,923	5,437	3,514
34	2032	0	1,923	0	1,923	5,437	3,514
35	2033	0	1,923	0	1,923	14,889	12,966

NPV: -32,048 B/C: 0.44 EIRR : 0.5%

Table 16.2.4-5 Economic Cost and Benefit: Plan 4B

(Unit: LE1000)

Serial Year	Year	Cost				Benefit	Balance
		Construction	O&M	Replace.	Total		
1	1999	1,355	0	0	1,355	0	-1,355
2	2000	24,580	0	0	24,580	0	-24,580
3	2001	18,196	0	0	18,196	0	-18,196
4	2002	0	1,241	0	1,241	267	-974
5	2003	0	1,241	0	1,241	838	-403
6	2004	0	1,241	0	1,241	1,310	70
7	2005	0	1,241	0	1,241	1,783	542
8	2006	18,196	1,241	0	19,437	2,722	-16,715
9	2007	0	1,861	0	1,861	3,233	1,371
10	2008	0	1,861	0	1,861	3,694	1,833
11	2009	0	1,861	0	1,861	4,156	2,294
12	2010	0	1,861	0	1,861	4,783	2,922
13	2011	12,267	1,861	0	14,128	4,985	-9,143
14	2012	0	2,275	0	2,275	5,288	3,013
15	2013	0	2,275	0	2,275	5,558	3,283
16	2014	0	2,275	0	2,275	5,828	3,553
17	2015	0	2,275	0	2,275	6,097	3,822
18	2016	0	2,275	6,012	8,287	6,172	-2,115
19	2017	0	2,275	0	2,275	6,247	3,972
20	2018	0	2,275	0	2,275	6,322	4,047
21	2019	0	2,275	0	2,275	6,397	4,122
22	2020	0	2,275	0	2,275	6,397	4,122
23	2021	0	2,275	9,018	11,293	6,397	-4,896
24	2022	0	2,275	0	2,275	6,397	4,122
25	2023	0	2,275	0	2,275	6,397	4,122
26	2024	0	2,275	0	2,275	6,397	4,122
27	2025	0	2,275	0	2,275	6,397	4,122
28	2026	0	2,275	11,022	13,297	6,397	-6,900
29	2027	0	2,275	0	2,275	6,397	4,122
30	2028	0	2,275	0	2,275	6,397	4,122
31	2029	0	2,275	0	2,275	6,397	4,122
32	2030	0	2,275	0	2,275	6,397	4,122
33	2031	0	2,275	6,012	8,287	6,397	-1,890
34	2032	0	2,275	0	2,275	6,397	4,122
35	2033	0	2,275	0	2,275	6,397	4,122
36	2034	0	2,275	0	2,275	17,552	15,277

NPV: -36,134 B/C: 0.43 EIRR : 0.6%

Table 16.2.4-6 Economic Cost and Benefit: Plan 4C

(Unit: LE1000)

Serial Year	Year	Cost				Benefit	Balance
		Construction	O&M	Replace.	Total		
1	1999	1,171	0	0	1,171	0	-1,171
2	2000	35,698	0	0	35,698	0	-35,698
3	2001	0	1,012	0	1,012	219	-793
4	2002	0	1,012	0	1,012	687	-325
5	2003	0	1,012	0	1,012	1,075	63
6	2004	0	1,012	0	1,012	1,462	450
7	2005	15,266	1,012	0	16,278	2,233	-14,045
8	2006	0	1,518	0	1,518	2,651	1,133
9	2007	0	1,518	0	1,518	3,030	1,512
10	2008	0	1,518	0	1,518	3,408	1,890
11	2009	0	1,518	0	1,518	3,923	2,405
12	2010	12,300	1,518	0	13,819	4,103	-9,715
13	2011	0	1,923	0	1,923	4,383	2,460
14	2012	0	1,923	0	1,923	4,630	2,707
15	2013	0	1,923	0	1,923	4,878	2,954
16	2014	0	1,923	0	1,923	5,142	3,219
17	2015	0	1,923	5,010	6,933	5,216	-1,718
18	2016	0	1,923	0	1,923	5,289	3,366
19	2017	0	1,923	0	1,923	5,363	3,440
20	2018	0	1,923	0	1,923	5,437	3,514
21	2019	0	1,923	0	1,923	5,437	3,514
22	2020	0	1,923	7,515	9,438	5,437	-4,001
23	2021	0	1,923	0	1,923	5,437	3,514
24	2022	0	1,923	0	1,923	5,437	3,514
25	2023	0	1,923	0	1,923	5,437	3,514
26	2024	0	1,923	0	1,923	5,437	3,514
27	2025	0	1,923	9,519	11,442	5,437	-6,005
28	2026	0	1,923	0	1,923	5,437	3,514
29	2027	0	1,923	0	1,923	5,437	3,514
30	2028	0	1,923	0	1,923	5,437	3,514
31	2029	0	1,923	0	1,923	5,437	3,514
32	2030	0	1,923	5,010	6,933	5,437	-1,496
33	2031	0	1,923	0	1,923	5,437	3,514
34	2032	0	1,923	0	1,923	5,437	3,514
35	2033	0	1,923	0	1,923	14,889	12,966

NPV: -32,048 B/C: 0.44 EIRR : 0.5%

Table 16.2.5-1 Average Annual Household Expenditure by Principal Expenditure Item in North Sinai Governorate: 1995/96

(Unit: LE per Year)

Item	Family Size (Persons/Household)								Total	Average
	1	2	3	4	5	6	7	8 & More		
I. Total in Governorate (Number of Sample Families: 60; Number of Persons in Sample Families: 379)										
1. Food and Beverages	2,821	4,639	8,192	17,094	20,476	19,551	32,722	84,124	189,619	3,160
2. Tobacco, Cigarettes and Drugs	-	540	810	1,809	1,752	540	1,920	3,600	10,971	183
3. Apparel, Textiles, Yarn and Foot Wear	401	657	1,551	3,359	3,367	3,040	5,542	11,577	29,494	492
4. Housing and Utilities	1,308	1,202	2,689	5,526	6,872	5,326	8,554	19,757	51,234	854
5. Furniture, Appliances and House Services	77	284	1,189	1,796	1,644	1,515	2,522	4,913	13,940	232
6. Health Care and Medical Services	169	910	638	1,241	1,151	1,199	1,583	3,402	10,295	172
7. Transport and Communication	632	420	334	796	1,097	1,477	2,011	5,290	12,057	201
8. Education Expenditure	-	-	180	420	1,567	1,147	2,488	6,026	11,828	197
9. Culture, Sport and Entertainment	72	-	526	552	732	604	1,494	3,097	7,077	118
10 Hotels, Coffees and Restaurants Services	-	384	96	144	276	-	-	264	1,164	19
11 Other Consumption	115	191	365	764	789	666	1,219	3,086	7,195	120
Total of Consumption Expenditure	5,595	9,227	16,570	33,501	39,723	35,065	60,057	145,136	344,874	5,748
12 Transfer Payments	25	115	86	286	355	333	489	1,655	3,344	56
13 Premium Payments	-	-	840	-	70	600	1,020	360	2,890	48
Total of Expenditure	5,620	9,342	17,496	33,787	40,148	35,998	61,566	147,151	351,108	5,852
II. Urban Residents (Number of Sample Families: 30; Number of Persons in Sample Families: 186)										
1. Food and Beverages	1,703	2,951	6,442	10,427	8,755	10,705	12,992	46,581	100,556	3,352
2. Tobacco, Cigarettes and Drugs	-	540	810	810	540	540	-	1,080	4,320	144
3. Apparel, Textiles, Yarn and Foot Wear	196	447	1,249	1,733	1,285	1,737	1,875	5,870	14,392	480
4. Housing and Utilities	717	887	2,146	3,382	2,320	2,928	3,209	11,577	27,166	906
5. Furniture, Appliances and House Services	40	187	425	1,093	1,010	1,056	459	2,786	7,056	235
6. Health Care and Medical Services	77	862	516	619	513	669	813	1,759	5,828	194
7. Transport and Communication	120	420	274	436	653	1,004	511	3,493	6,911	230
8. Education Expenditure	-	-	180	336	683	814	888	3,352	6,253	208
9. Culture, Sport and Entertainment	-	-	526	390	360	428	750	1,540	3,994	133
10 Hotels, Coffees and Restaurants Services	-	384	96	144	-	-	-	120	744	25
11 Other Consumption	51	119	274	493	395	339	550	1,658	3,879	129
Total of Consumption Expenditure	2,904	6,797	12,938	19,863	16,514	20,220	22,047	79,816	181,099	6,037
12 Transfer Payments	-	65	71	125	140	153	158	960	1,672	56
13 Premium Payments	-	-	840	-	70	-	1,020	360	2,290	76
Total of Expenditure	2,904	6,862	13,849	19,988	16,724	20,373	23,225	81,136	185,061	6,169
III. Rural Residents (Number of Sample Families: 30; Number of Persons in Sample Families: 193)										
1. Food and Beverages	1,118	1,688	1,750	6,667	11,721	8,846	19,730	37,543	89,063	2,969
2. Tobacco, Cigarettes and Drugs	-	-	-	999	1,212	-	1,920	2,520	6,651	222
3. Apparel, Textiles, Yarn and Foot Wear	205	210	302	1,626	2,082	1,303	3,667	5,707	15,102	503
4. Housing and Utilities	591	315	543	2,144	4,552	2,398	5,345	8,180	24,068	802
5. Furniture, Appliances and House Services	37	97	764	703	634	459	2,063	2,127	6,884	229
6. Health Care and Medical Services	92	48	122	622	638	530	772	1,643	4,467	149
7. Transport and Communication	512	-	60	360	444	473	1,500	1,797	5,146	172
8. Education Expenditure	-	-	-	84	884	333	1,600	2,674	5,575	186
9. Culture, Sport and Entertainment	72	-	-	162	372	176	744	1,557	3,083	103
10 Hotels, Coffees and Restaurants Services	-	-	-	-	276	-	-	144	420	14
11 Other Consumption	64	72	91	271	394	327	669	1,428	3,316	111
Total of Consumption Expenditure	2,691	2,430	3,632	13,638	23,209	14,845	38,010	65,320	163,775	5,459
12 Transfer Payments	25	50	15	161	215	180	331	695	1,672	56
13 Premium Payments	-	-	-	-	-	600	-	-	600	20
Total of Expenditure	2,716	2,480	3,647	13,799	23,424	15,625	38,341	66,015	166,047	5,535

Source: Expenditure and Consumption Survey 1995-1996, Vol.4 Additional Tables, 1997, CAPMAS

Note: Data in South Sinai Governorate are not available in the Survey.

Table 16.2.5-2 Standard Unit of Industrial Production Based on Statistical Information

Industrial Type	Number of Manufacturers	Per Establishment							Water Recirculation Rate
		Employees	Production	Value Added	Factory Site Area	Factory Floor Area	Water Use		
							Consumption	Replenishment	
		(Persons)	(US$ Million)	(US$ Million)	(ha)	(1000m2)	(m^3/day)	(m^3/day)	(%)
1. Food Industry	6,671	96	13.7	4.5	1.2	3.1	642	404	37
2. Wood & Wooden Products	1,192	68	8.4	2.8	2.2	5.4	73	63	14
3. Chemical Products	2,123	166	49.7	22.4	7.5	11.5	19,666	3,900	80
4. Products of Petroleum & Coal	130	216	364.2	36.2	44.7	12.2	45,718	6,154	87
5. Tanneries & Leather Products	384	76	7.0	2.6	0.5	1.8	86	83	4
6. Non-metallic Mineral Products	2,898	88	11.3	5.3	3.6	7.1	1,148	312	73
7. Basic Metal Industry	1,403	220	55.2	15.9	12.8	27.2	25,765	2,695	90
Simple Average	-	133	72.8	12.8	10.4	9.8	13,300	1,944	55

Industrial Type	Per Production (US$ Million)				Per Factory Site (ha)			
	Employees	Site	Water Replenishment	Value Added	Employees	Production	Water Replenishment	Value Added
	(Persons)	(m2)	(m^3/day)	(US$ 1000)	(Persons)	(US$ Million)	(m^3/day)	(US$ Million)
1. Food Industry	7.1	850	30	327	0.83	11.8	349	3.9
2. Wood & Wooden Products	8.2	2,584	7	332	0.31	3.9	29	1.3
3. Chemical Products	3.4	1,496	78	450	0.22	6.7	523	3.0
4. Products of Petroleum & Coal	5.1	1,224	17	99	0.05	8.1	138	0.8
5. Tanneries & Leather Products	10.7	748	12	364	1.43	13.3	156	4.9
6. Non-metallic Mineral Products	7.8	3,196	28	466	0.25	3.1	87	1.5
7. Basic Metal Industry	3.9	2,329	49	288	0.17	4.3	210	1.2
Simple Average	6.6	1,775	31	332	0.47	7.3	213	2.4

Source: Average Unit Rates for Industrial Location in Japan, 1986, Japan Industrial Location Centre

Table 16.2.5-3 Water Cost in Total Output of Manufacturing Industry

Item	Amount*1 (JYen Billion)	Percentage (%)
I. Intermediate Input Materials and Services		
1. Agricultural Sector	11,819	10.87
2. Industrial Sector	35,926	33.04
(1) Mining & Quarrying	5,564	5.12
(2) Manufacturing	27,793	25.56
(3) Construction	207	0.19
(4) Electricity and Gas	2,109	1.94
(5) Water	252	0.23
3. Services Sector	14,501	13.34
Sub-total	62,246	57.25
II. Import Materials	9,840	9.05
III. Gross Value Added		
1. Compensation of Employees	14,028	12.90
2. Non-household expenditure	2,077	1.91
3. Depreciation	3,673	3.38
4. Indirect Taxes	8,361	7.69
5. Subsidies	-690	-0.63
6. Operating Surplus	9,200	8.46
Sub-total	36,649	33.70
IV. Total Output	108,735	100.00

Source: Input-Output Table in 1986, January 1991, MITI of Japan

Note: *1 The following industrial types are selected.

1. Food Industry
2. Wood & Wooden Products
3. Chemical Products
4. Products of Petroleum & Coal
5. Tanneries & Leather Products
6. Non-metallic Mineral Products
7. Metal Fabrication

Table 16.2.5-4 Number of Foreign Tourists and Tour Cost in Egypt

Item	1994	1995	1996	Average
1. Foreign Tourists (in 1000)				
(1) Number of Tourists (1000)	2,582	3,133	3,896	3,204
a. Arabs	932	823	897	884
b. Europeans	1,030	1,515	2,022	1,522
c. Americans	182	229	259	223
d. Others	438	566	718	574
(2) Number of Tourist Nights (1000)	15,433	13,777	23,765	17,658
a. Arabs	6,573	4,650	6,228	5,817
b. Europeans	5,933	6,479	12,968	8,460
c. Americans	1,003	916	1,471	1,130
d. Others	1,924	1,732	3,098	2,251
(3) Average Nights per Tourist	6.0	4.4	6.1	5.5
a. Arabs	7.1	5.7	6.9	6.5
b. Europeans	5.8	4.3	6.4	5.5
c. Americans	5.5	4.0	5.7	5.1
d. Others	4.4	3.1	4.3	3.9
2. Foreign Currency Revenue Through Tourism				
(1) Total Revenue (LE Million)	6,002	7,803	10,216	8,007
(2) Tour Cost per Tourist (LE)	2,324	2,490	2,622	2,479
(3) Tour Cost per Tourist Night (LE)	389	566	430	462

Source: Statistical Year Book 1991-1996, June 1997, CAPMAS

Table 16.2.5-5 Water Cost in Total Output of Hotels and Restaurants

Item	Amount*1 (JYen Billion)	Percentage (%)
I. Intermediate Input Materials and Services		
1. Agricultural Sector	775	3.96
2. Industrial Sector	5,147	26.32
(1) Manufacturing & Mining	4,461	22.81
(2) Construction	46	0.23
(3) Electricity and Gas	466	2.38
(4) **Water**	174	**0.89**
3. Services Sector	3,249	16.61
Sub-total	9,171	46.89
II. Import Materials	378	1.93
III. Gross Value Added		
1. Compensation of Employees	6,025	30.81
2. Non-household expenditure	411	2.10
3. Depreciation	816	4.17
4. Indirect Taxes	846	4.33
5. Subsidies	0	0.00
6. Operating Surplus	1,910	9.77
Sub-total	10,008	51.17
IV. Total Output	19,558	100.00

Source: Input-Output Table in 1986, January 1991, MITI of Japan
Note: *1 Sub-sectos of hotel and restaurant are selected from 180 X 180 sector matrix.

Table 16.3.2-1 Water Tariff of Eight Cities in South Sinai Governorate: 1998

(Unit: LE/m^3)

Item			El Tur	Abu Zenima	Ras Sudr	Abu Rudeis
1.	Residential					
	1)	Flat Rate	-	-*1	-	-
	2)	Metered Rate				
	(1)	Less than 30 m^3	0.18	0.18	0.18	0.18
	(2)	31 ~ 50 m^3	0.25	0.25	0.25	0.25
	(3)	More than 51 m^3	1.00	1.00	1.00	1.00
2.	Commercial		1.00	1.00*1	1.00	6.50
3.	Hotel		6.00	6.00	6.00	-
4.	Industrial		1.00	3.00	1.00	6.50
5.	Agricultural		-	-	-	-

Item			St. Catherine	Sharm El Sheikh	Dahab	Nuweiba
1.	Residential					
	1)	Flat Rate	4.00*2	-	1.00	1.00
	2)	Metered				
	(1)	Less than 30 m^3	-	0.18	-	-
	(2)	31 ~ 50 m^3	-	0.25	-	-
	(3)	More than 51 m^3	-	1.00	-	-
2.	Commercial		4.00	1.00	6.00	6.00
3.	Hotel		6.00	6.00	6.00	6.00
4.	Industrial		-	1.00	-	-
5.	Agricultural		-	-	-	1.00

Note: *1 Water tariff for consumers supplied by a tank lorry: LE1.00 for residential and LE6.00 for commercial
*2 LE per household per month

Table 16.3.2-2 Unit Financial Revenue of Irrigation Scheme

Item	Wheat	Barley	Tomato	Watermelon	Olive	Orange	Total	Unit Revenue (LE/feddan)
1. Unit of Net Income (LE/feddan)								
Maintenance	760	279	9,400	2,055	8,371	2,445	-	-
Initial Investment	-	-	-	-	-1,771	-1,275	-	-
2. Total Area (feddan)	25	20	15	15	15	10	100	-
3. Total Cropped Area (feddan)	50	40	30	30	15	15	180	-
4. Net Income (LE1000) at Matured Stage	37,978	11,160	282,006	61,649	125,572	36,682	555,046	-
5. Annual Benefit *2								
1st Year	7,596	2,232	56,401	12,330	-26,561	-19,118	32,879	183
2nd Year	15,191	4,464	112,802	24,660	-16,481	-9,038	131,598	731
3rd Year	22,787	6,696	169,203	36,989	-16,481	-9,038	210,156	1,168
4th Year	30,382	8,928	225,605	49,319	-16,481	-9,038	288,715	1,604
5th Year	37,978	11,160	282,006	61,649	25,114	7,336	425,243	2,362
6th Year	37,978	11,160	282,006	61,649	50,229	14,673	457,694	2,543
7th Year	37,978	11,160	282,006	61,649	75,343	22,009	490,144	2,723
8th Year	37,978	11,160	282,006	61,649	100,457	29,345	522,595	2,903
9th Year	37,978	11,160	282,006	61,649	125,572	36,682	555,046	3,084
10th Year	37,978	11,160	282,006	61,649	125,572	36,682	555,046	3,084

Note: *1 Cropping intensity is assumed at 180%. Cropping system is set up referring to the system in the North Sinai irrigation scheme.
*2 It is assumed to need five years for the crop to attain the matured yield.
It is assumed to need four years for the crop to come into bearing. Moreover, It is assumed to need five years for the crop to attain the matured yield.

Table 16.3.4-1 Financial Cost and Revenue: Plan 1

(Unit: LE1000)

Serial Year	Year	Cost				Revenue	Balance
		Construction	O&M	Replace.	Total		
1	1999	4,665	0	0	4,665	0	-4,665
2	2000	4,665	0	0	4,665	0	-4,665
3	2001	90,474	0	0	90,474	0	-90,474
4	2002	90,474	0	0	90,474	0	-90,474
5	2003	90,474	0	0	90,474	0	-90,474
6	2004	57,070	5,912	0	62,982	2,226	-60,755
7	2005	0	6,349	0	6,349	2,604	-3,745
8	2006	0	6,787	0	6,787	3,040	-3,747
9	2007	38,399	7,224	0	45,623	3,549	-42,074
10	2008	38,399	7,662	0	46,061	3,908	-42,153
11	2009	0	8,099	0	8,099	4,302	-3,798
12	2010	0	8,537	0	8,537	4,734	-3,802
13	2011	0	8,974	0	8,974	5,212	-3,762
14	2012	23,463	9,412	0	32,875	5,741	-27,134
15	2013	23,463	9,849	0	33,312	6,210	-27,102
16	2014	0	10,287	0	10,287	6,728	-3,559
17	2015	0	10,724	0	10,724	7,302	-3,423
18	2016	0	11,162	0	11,162	7,940	-3,222
19	2017	0	11,600	0	11,600	8,653	-2,946
20	2018	0	11,600	35,037	46,637	8,653	-37,983
21	2019	0	11,600	0	11,600	8,653	-2,946
22	2020	0	11,600	0	11,600	8,653	-2,946
23	2021	0	11,600	0	11,600	8,653	-2,946
24	2022	0	11,600	0	11,600	8,653	-2,946
25	2023	0	11,600	10,020	21,620	8,653	-12,966
26	2024	0	11,600	0	11,600	8,653	-2,946
27	2025	0	11,600	0	11,600	8,653	-2,946
28	2026	0	11,600	0	11,600	8,653	-2,946
29	2027	0	11,600	0	11,600	8,653	-2,946
30	2028	0	11,600	6,012	17,612	8,653	-8,958
31	2029	0	11,600	0	11,600	8,653	-2,946
32	2030	0	11,600	0	11,600	8,653	-2,946
33	2031	0	11,600	0	11,600	8,653	-2,946
34	2032	0	11,600	0	11,600	8,653	-2,946
35	2033	0	11,600	35,037	46,637	8,653	-37,983
36	2034	0	11,600	0	11,600	8,653	-2,946
37	2035	0	11,600	0	11,600	8,653	-2,946
38	2036	0	11,600	0	11,600	8,653	-2,946
39	2037	0	11,600	0	11,600	8,653	-2,946
40	2038	0	11,600	10,020	21,620	44,035	22,416

NPV: -295,425 B/C: 0.10 FIRR : ---

Table 16.3.4-2 Financial Cost and Revenue: Plan 2

(Unit: LE1000)

Serial Year	Year	Cost				Revenue	Balance
		Construction	O&M	Replace.	Total		
1	1999	4,430	0	0	4,430	0	-4,430
2	2000	4,430	0	0	4,430	0	-4,430
3	2001	58,511	0	0	58,511	0	-58,511
4	2002	97,179	0	0	97,179	0	-97,179
5	2003	97,179	0	0	97,179	0	-97,179
6	2004	97,179	0	0	97,179	0	-97,179
7	2005	97,179	0	0	97,179	0	-97,179
8	2006	0	11,737	0	11,737	7,874	-3,864
9	2007	26,175	12,039	0	38,214	8,521	-29,694
10	2008	26,175	12,341	0	38,516	9,044	-29,473
11	2009	0	12,644	0	12,644	9,592	-3,051
12	2010	0	12,946	0	12,946	10,169	-2,777
13	2011	0	13,248	0	13,248	10,774	-2,473
14	2012	0	13,550	0	13,550	11,410	-2,139
15	2013	13,683	13,852	0	27,535	11,847	-15,688
16	2014	13,683	14,154	0	27,837	12,300	-15,536
17	2015	0	14,456	0	14,456	12,772	-1,684
18	2016	0	14,758	0	14,758	13,264	-1,494
19	2017	0	15,060	0	15,060	13,776	-1,284
20	2018	0	15,060	0	15,060	13,776	-1,284
21	2019	0	15,060	0	15,060	13,776	-1,284
22	2020	0	15,060	35,315	50,375	13,776	-36,599
23	2021	0	15,060	0	15,060	13,776	-1,284
24	2022	0	15,060	0	15,060	13,776	-1,284
25	2023	0	15,060	6,012	21,072	13,776	-7,296
26	2024	0	15,060	0	15,060	13,776	-1,284
27	2025	0	15,060	0	15,060	13,776	-1,284
28	2026	0	15,060	0	15,060	13,776	-1,284
29	2027	0	15,060	0	15,060	13,776	-1,284
30	2028	0	15,060	0	15,060	13,776	-1,284
31	2029	0	15,060	3,507	18,567	13,776	-4,791
32	2030	0	15,060	0	15,060	13,776	-1,284
33	2031	0	15,060	0	15,060	13,776	-1,284
34	2032	0	15,060	0	15,060	13,776	-1,284
35	2033	0	15,060	0	15,060	13,776	-1,284
36	2034	0	15,060	0	15,060	13,776	-1,284
37	2035	0	15,060	35,315	50,375	13,776	-36,599
38	2036	0	15,060	0	15,060	13,776	-1,284
39	2037	0	15,060	0	15,060	13,776	-1,284
40	2038	0	15,060	6,012	21,072	13,776	-7,296
41	2039	0	15,060	0	15,060	46,454	31,394

NPV: -327,460 B/C: 0.15 FIRR : ---

Table 16.3.4-3 Financial Cost and Revenue: Plan 3

(Unit: LE1000)

Serial Year	Year	Cost				Benefit	Balance
		Construction	O&M	Replace.	Total		
1	1999	387	0	0	387	0	-387
2	2000	13,152	0	0	13,152	0	-13,152
3	2001	0	263	0	263	59	-204
4	2002	0	272	0	272	79	-193
5	2003	3,492	282	0	3,774	93	-3,680
6	2004	0	291	0	291	109	-182
7	2005	0	300	0	300	125	-175
8	2006	0	310	0	310	143	-167
9	2007	0	319	0	319	162	-157
10	2008	0	328	0	328	183	-146
11	2009	0	337	0	337	206	-132
12	2010	0	347	0	347	231	-116
13	2011	0	356	0	356	258	-98
14	2012	0	365	0	365	289	-76
15	2013	0	375	0	375	319	-55
16	2014	0	384	0	384	352	-31
17	2015	0	393	1,200	1,593	389	-1,204
18	2016	0	402	0	402	431	28
19	2017	0	412	0	412	476	65
20	2018	0	412	600	1,012	476	-535
21	2019	0	412	0	412	476	65
22	2020	0	412	0	412	476	65
23	2021	0	412	0	412	476	65
24	2022	0	412	0	412	476	65
25	2023	0	412	0	412	476	65
26	2024	0	412	0	412	476	65
27	2025	0	412	0	412	476	65
28	2026	0	412	0	412	476	65
29	2027	0	412	0	412	476	65
30	2028	0	412	0	412	476	65

NPV: -14,580 B/C: 0.10 FIRR : ---

Table 16.3.4-4 Financial Cost and Revenue: Plan 4A

(Unit: LE1000)

Serial Year	Year	Cost				Revenue	Balance
		Constuuction	O&M	Replace.	Total		
1	1999	1,171	0	0	1,171	0	-1,171
2	2000	35,698	0	0	35,698	0	-35,698
3	2001	0	1,012	0	1,012	131	-881
4	2002	0	1,012	0	1,012	523	-489
5	2003	0	1,012	0	1,012	836	-176
6	2004	0	1,012	0	1,012	1,148	136
7	2005	15,266	1,012	0	16,278	1,756	-14,521
8	2006	0	1,518	0	1,518	2,082	563
9	2007	0	1,518	0	1,518	2,367	849
10	2008	0	1,518	0	1,518	2,652	1,134
11	2009	0	1,518	0	1,518	3,053	1,534
12	2010	12,300	1,518	0	13,819	3,170	-10,649
13	2011	0	1,923	0	1,923	3,391	1,468
14	2012	0	1,923	0	1,923	3,581	1,657
15	2013	0	1,923	0	1,923	3,770	1,847
16	2014	0	1,923	0	1,923	3,987	2,064
17	2015	0	1,923	5,010	6,933	4,039	-2,894
18	2016	0	1,923	0	1,923	4,090	2,167
19	2017	0	1,923	0	1,923	4,142	2,219
20	2018	0	1,923	0	1,923	4,194	2,271
21	2019	0	1,923	0	1,923	4,194	2,271
22	2020	0	1,923	7,515	9,438	4,194	-5,244
23	2021	0	1,923	0	1,923	4,194	2,271
24	2022	0	1,923	0	1,923	4,194	2,271
25	2023	0	1,923	0	1,923	4,194	2,271
26	2024	0	1,923	0	1,923	4,194	2,271
27	2025	0	1,923	9,519	11,442	4,194	-7,248
28	2026	0	1,923	0	1,923	4,194	2,271
29	2027	0	1,923	0	1,923	4,194	2,271
30	2028	0	1,923	0	1,923	4,194	2,271
31	2029	0	1,923	0	1,923	4,194	2,271
32	2030	0	1,923	5,010	6,933	4,194	-2,739
33	2031	0	1,923	0	1,923	4,194	2,271
34	2032	0	1,923	0	1,923	4,194	2,271
35	2033	0	1,923	0	1,923	13,646	11,723

NPV: -37,556 B/C: 0.34 FIRR : -2.6%

Table 16.3.4-5 Financial Cost and Revenue: Plan 4B

(Unit: LE1000)

Serial Year	Year	Cost				Revenue	Balance
		Construction	O&M	Replace.	Total		
1	1999	1,355	0	0	1,355	0	-1,355
2	2000	24,580	0	0	24,580	0	-24,580
3	2001	18,196	0	0	18,196	0	-18,196
4	2002	0	1,256	0	1,256	159	-1,096
5	2003	0	1,256	0	1,256	638	-618
6	2004	0	1,256	0	1,256	1,019	-237
7	2005	0	1,256	0	1,256	1,400	144
8	2006	18,196	1,256	0	19,452	2,141	-17,310
9	2007	0	1,884	0	1,884	2,538	654
10	2008	0	1,884	0	1,884	2,886	1,002
11	2009	0	1,884	0	1,884	3,234	1,350
12	2010	0	1,884	0	1,884	3,722	1,838
13	2011	12,267	1,884	0	14,150	3,854	-10,297
14	2012	0	2,302	0	2,302	4,092	1,790
15	2013	0	2,302	0	2,302	4,298	1,995
16	2014	0	2,302	0	2,302	4,503	2,201
17	2015	0	2,302	0	2,302	4,724	2,422
18	2016	0	2,302	6,012	8,314	4,776	-3,538
19	2017	0	2,302	0	2,302	4,829	2,526
20	2018	0	2,302	0	2,302	4,881	2,579
21	2019	0	2,302	0	2,302	4,934	2,631
22	2020	0	2,302	0	2,302	4,934	2,631
23	2021	0	2,302	9,018	11,320	4,934	-6,387
24	2022	0	2,302	0	2,302	4,934	2,631
25	2023	0	2,302	0	2,302	4,934	2,631
26	2024	0	2,302	0	2,302	4,934	2,631
27	2025	0	2,302	0	2,302	4,934	2,631
28	2026	0	2,302	11,022	13,324	4,934	-8,391
29	2027	0	2,302	0	2,302	4,934	2,631
30	2028	0	2,302	0	2,302	4,934	2,631
31	2029	0	2,302	0	2,302	4,934	2,631
32	2030	0	2,302	0	2,302	4,934	2,631
33	2031	0	2,302	6,012	8,314	4,934	-3,381
34	2032	0	2,302	0	2,302	4,934	2,631
35	2033	0	2,302	0	2,302	4,934	2,631
36	2034	0	2,302	0	2,302	16,089	13,787

NPV: -42,287 B/C: 0.33 FIRR : -2.5%

Table 16.3.4-6 Financial Cost and Revenue: Plan 4C

(Unit: LE1000)

Serial Year	Year	Cost				Benefit	Balance
		Construction	O&M	Replace.	Total		
1	1999	1,171	0	0	1,171	0	-1,171
2	2000	35,698	0	0	35,698	0	-35,698
3	2001	0	1,012	0	1,012	131	-881
4	2002	0	1,012	0	1,012	523	-489
5	2003	0	1,012	0	1,012	836	-176
6	2004	0	1,012	0	1,012	1,148	136
7	2005	15,266	1,012	0	16,278	1,756	-14,521
8	2006	0	1,518	0	1,518	2,082	563
9	2007	0	1,518	0	1,518	2,367	849
10	2008	0	1,518	0	1,518	2,652	1,134
11	2009	0	1,518	0	1,518	3,053	1,534
12	2010	12,300	1,518	0	13,819	3,170	-10,649
13	2011	0	1,923	0	1,923	3,391	1,468
14	2012	0	1,923	0	1,923	3,581	1,657
15	2013	0	1,923	0	1,923	3,770	1,847
16	2014	0	1,923	0	1,923	3,987	2,064
17	2015	0	1,923	5,010	6,933	4,039	-2,894
18	2016	0	1,923	0	1,923	4,090	2,167
19	2017	0	1,923	0	1,923	4,142	2,219
20	2018	0	1,923	0	1,923	4,194	2,271
21	2019	0	1,923	0	1,923	4,194	2,271
22	2020	0	1,923	7,515	9,438	4,194	-5,244
23	2021	0	1,923	0	1,923	4,194	2,271
24	2022	0	1,923	0	1,923	4,194	2,271
25	2023	0	1,923	0	1,923	4,194	2,271
26	2024	0	1,923	0	1,923	4,194	2,271
27	2025	0	1,923	9,519	11,442	4,194	-7,248
28	2026	0	1,923	0	1,923	4,194	2,271
29	2027	0	1,923	0	1,923	4,194	2,271
30	2028	0	1,923	0	1,923	4,194	2,271
31	2029	0	1,923	0	1,923	4,194	2,271
32	2030	0	1,923	5,010	6,933	4,194	-2,739
33	2031	0	1,923	0	1,923	4,194	2,271
34	2032	0	1,923	0	1,923	4,194	2,271
35	2033	0	1,923	0	1,923	13,646	11,723

NPV: -37,556 B/C: 0.34 FIRR : -2.6%

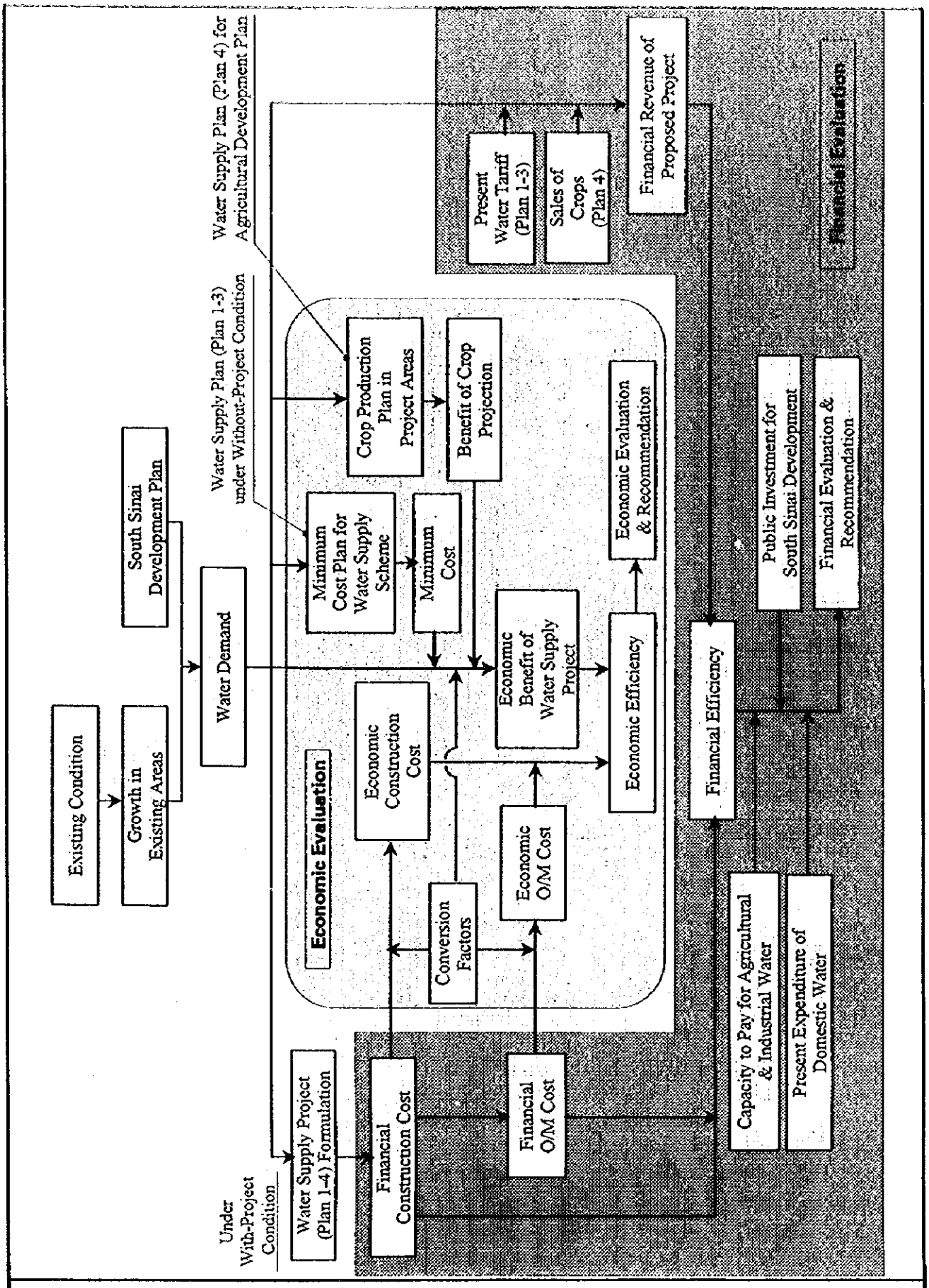

Fig.16.1.1-1 Procedure of Project Evaluation

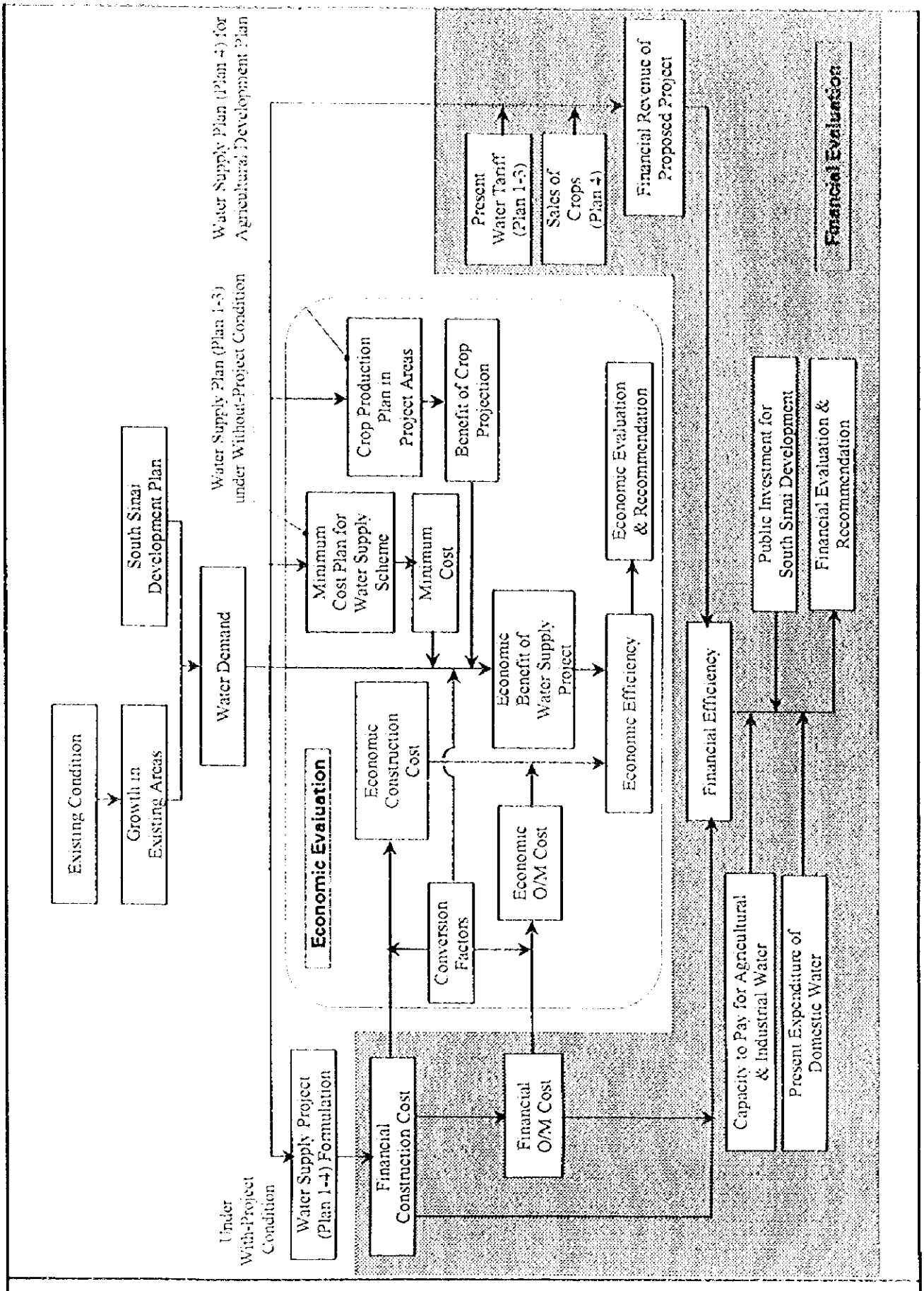

Fig 16.1.1-1 Procedure of Project Evaluation