Table 2.5 Economic Farmgate Price of Palay

(Unit: per ton)

Item	US$	Pesos
1. World Market Price *1	261	
FOB, Bangkok, 5% broken milled rice in 1992		
Import Parity		
2. Quality Discount	47	
(18% Applicable to Philippine coarse rice varieties)		
3. Freight (Bangkok to Iloilo)	20	
4. CIF Philippines	234	
Peso Equivalent		6,085
5. Port Handling & Warehouse Charge, etc.		913
6. Transport & Handling *3		200
7. Wholesale Price		7,197
8. Milling Cost		857
9. Palay Equivalent (Yield of Rice from Paddy) *4		3,994
10. Transport & Handling Cost for Milling *5		40
11. Economic Farmgate Price of Palay		3,954
	(=	4,000)

Source: (1) The Panay River Basin-wide Flood Control Study, Supporting Report II, 1985, JICA
(2) Study on Ilog-Hilabangan River Basin Flood Control Project, Interim Report, 1991, JICA
(3) Feasibility Study on the Improvement of Major Road Sections in Luzon, Visaya, DPWH

Note: *1 Quarterly Review of Commodity Markets, Fourth Quarter 1992, World Bank
*2 Conversion rate was P.26.00 per US$1.00.
*3 Charged based on average distance of 50km at P.4/ton-km.
*4 63% of yield of rice based on average of private mills.
*5 Charged based on average distance of 10km at P.4/ton-km.

Table 2.6 Economic Farmgate Price of Urea

(Unit: per ton)

Item	US$	Pesos
1. World Market Price *1	141	
Import Parity		
3. Freight & Insurance	24	
4. CIF Philippines	165	
Peso Equivalent		4,290
5. Port Handling & Warehouse Charge, etc. *3		1,095
6. Transport & Handling *4		200
7. Wholesale Price		5,585
8. Transport & Handling Cost to Farmgate		40
9. Economic Farmgate Price of Urea		5,545
10. Economic Farmgate Price of Urea (Per 50 kg Bag)	(=	275)

Source: (1) The Panay River Basin-wide Flood Control Study, Supporting Report II, 1985, JICA
(2) Study on Ilog-Hilabangan River Basin Flood Control Project, Interim Report, 1991, JICA
(3) Feasibility Study on the Improvement of Major Road Sections in Luzon, Visaya, DPWH

Note: *1 Quarterly Review of Commodity Markets, Fourth Quarter 1992, World Bank
*2 Conversion rate was P.26.00 per US$1.00.
*3 Assumed as 1.2 times of palay case.
*4 Charged based on average distance of 50km at P.4/ton-km.

Table 2.7 Production Cost of Palay

Cost Item	Quantity	Unit (per ha)	Unit Price	Amount
1. Labor				
Nursery Work	3	M/D *1	40	120
Land Preparation & Clearing Field	8	M/D *1	40	320
	2	M/D *2	60	120
Basic Fertilizer	3	M/D *1	40	120
Pulling & Transplanting	30	M/D *1	40	1,200
Weeding	20	M/D *1	40	800
Top Dressing	2	M/D *1	40	80
Spraying	2	M/D *1	40	80
Harvesting	20	M/D *1	40	800
Treating	10	M/D *1	40	400
	1	M/D *2	60	60
Drying	10	M/D *1	40	400
Sub-total				4,500
2. Membership Fee				700
3. Materials				
Seeds	3	Cavern	350	1,050
Fertilizers				
Urea (45-0-0)	2	bag(50kg)	275	550
Complete (14-14-14)	3	bag(50kg)	303	908
Agro-chemicals	3	Quarts	220	660
Others				200
Sub-total				3,368
4. Total				8,568
			(=	8,600)

Source: (1) The Panay River Basin-wide Flood Control Study, Supporting Report II, 1985, JICA
(2) Study on Ilog-Hilabangan River Basin Flood Control Project, Interim Report, 1991, JICA
(3) Feasibility Study on the Improvement of Major Road Sections in Luzon, Visaya, DPWH

Note: *1 Man-power: man-days
*2 Animal-power: the total number of working days

Table 2.8 Average Damageable Value of Palay

Item		Jan.	Fev.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1. Crop Calendar													
2. Planted Area (%)	1st Crop					25	75	100	100	75	25		
	2nd Crop	100	75	25							25	75	100
3. Accumulated Cost (%)	1st Crop					16	38	54	74	85	100		
	2nd Crop	74	85	100							16	38	54
4. Flood Frequency (%)		0	0	1	1	5	17	15	27	13	13	8	0
5. Damageable Value *1 (Pesos/ha)	1st Crop	0	0	0	0	120	1,462	1,927	3,932	1,512	546	0	0
	2nd Crop	0	0	30	0	0	0	0	0	0	155	400	0

	1st Crop	2nd Crop	Total/Average
6. Yield (ton/ha)	4.2	3.0	3.6
7. Economic Farmgate Price (Pesos/ton)	4,000	4,000	4,000
8. Production Cost (Pesos/ha)	8,600	8,600	17,200
9. Net Income (Pesos/ha)	8,200	3,400	11,600
10 Damageable Value (Pesos/ha)	9,499	585	10,084 (= 10,100)

Source: (1) Quarterly Review of Commodity Market, Fourth Quarter 1992, World Bank
(2) The Panay River Basin-wide Flood Control Study, Supporting Report II, 1985, JICA
(3) Study on Ilog-Hilabangan River Basin Flood Control Project, Interim Report, 1991, JICA
(4) Feasibility Study on the Improvement of Major Road Sections in Luzon, Visaya, DPWH

Note: *1 (2)*(4)*{(3)*(8)+(9)}

Table 2.9 Average Damageable Value of Prawn

Item		Jan.	Fev.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1. Farm Calendar			1st					2nd			3rd		
2. Area Factor (%)	1st Farm		100	100	100	100							
	2nd Farm						100	100	100	100			
	3rd Farm	100									100	100	100
3. Stocking Rate (pcs/ha)	1st Farm		3,000 (Fry)	2,800	2,600	2,400							
	2nd Farm						3,000 (Fry)	2,800	2,600	2,400			
	3rd Farm	2,400									3,000 (Fry)	2,800	2,600
4. Stocking Value (P.1000/ha)	1st Farm		3.9	19.2	26.7	32.9							
	2nd Farm						3.9	19.2	26.7	32.9			
	3rd Farm	32.9									3.9	19.2	26.7
5. Production Cost (P.1000/ha)													
Fry		-	3.9	-	-	-	3.9	-	-	-	3.9	-	-
Labor		0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.2
3. Accumulated Cost (%) (P.1000/ha)	1st Farm		4.2	4.4	4.6	4.9							
	2nd Farm						4.2	4.4	4.6	4.9			
	3rd Farm	4.9									4.2	4.4	4.6
4. Flood Frequency (%)		0	0	1	1	5	17	15	27	13	13	8	0
5. Damageable Value *1 (Pesos/ha)	1st Farm	0	0	280	280	1,399	0	0	0	0	0	0	0
	2nd Farm	0	0	0	0	0	4,756	4,196	7,554	3,637	0	0	0
	3rd Farm	0	0	0	0	0	0	0	0	0	3,637	2,238	0

	1st Farm	2nd Farm	3rd Farm	Total/Average
6. Yield (ton/ha)	0	0	0	1
7. Gross Income (Pesos/ha)	32,900	32,900	32,900	98,700
8. Production Cost (Pesos/ha)	4,928	4,928	4,928	14,784
9. Net Income (Pesos/ha)	27,972	27,972	27,972	55,944
10 Damageable Value (Pesos/ha)	1,958	20,143	5,875	22,102 (= 22,100

Source: (1) Quarterly Review of Commodity Market, Fourth Quarter 1992, World Bank
(2) The Panay River Basin-wide Flood Control Study, Supporting Report II, 1985, JICA
(3) Study on Ilog-Hilabangan River Basin Flood Control Project, Interim Report, 1991, JICA
(4) Feasibility Study on the Improvement of Major Road Sections in Luzon, Visaya, DPWH

Note: *1 (2)*(4)*{(3)*(8)+(9)}

Table 2.10 Standard Damage Rates for Damageable Properties

Kind of Property	Inundation below Floor Level	Inundation Depth above Floor Level (m) Less than 0.5	0.5 - 0.99	1.0 - 1.99	2.0 - 3.0	More than 3.0
1. Dwelling Unit						
Building *1 A Group	0.030	0.083	0.126	0.177	0.266	0.344
B Group	0.030	0.124	0.210	0.308	0.439	0.572
Household Effects	-	0.086	0.191	0.331	0.499	0.690
2. Industrial Facility						
Fixed Assets	-	0.180	0.314	0.419	0.539	0.632
Inventory Stock	-	0.127	0.276	0.379	0.479	0.562

3. Agriclutural Products

	Inundation Depth (m) Less than 0.5	0.5 - 0.99	More than 1.0
Palay	0.21	0.24	0.37
Prawn	1.00	1.00	1.00

Source: Criteria for Engineering of River and Sabo Project, Ministry of Construction of Japan
Note: *1 A Group is applied for flood prone areas having land slope of between 1/500 and 1/1,000.
B Group is for areas having land slope of mort than 1/500.

Table 2.11 Damageable Property by Flood Return Period in Jaro River Basin

Item	Return Period (Year)					
	2	5	10	20	50	100
I. Affected Population and Damageable Properties						
1 Affected Population	58,706	71,402	87,403	98,003	111,471	121,380
2 Area Inundated (sq.km.)*1	12	18	25	28	32	34
3 Assets Inundated						
1) Dwelling	10,793	13,132	16,071	18,008	20,491	22,298
2) Industrial Establishment	73	86	101	113	130	140
3) Service Establishment	535	661	807	897	1,019	1,104
4) Palay Field (ha)	210	537	964	1,090	1,249	1,345
5) Fishpond (ha)	188	211	964	296	320	337
II. Estimated Value of Damageable Property (Unit: Million Pesos)						
1 Dwelling	135.371	170.804	217.562	288.431	375.561	437.187
2 Industrial Establishment	43.392	78.764	120.095	169.094	189.467	202.164
3 Service Establishment	14.195	20.827	35.542	45.437	52.039	58.590
4 Crop Production	0.662	0.956	1.100	1.178	1.329	1.415
5 Inland Fishery Production	1.356	1.381	1.586	1.649	1.775	1.775
Sub-Total	194.976	272.732	375.885	505.789	620.171	701.131
6 Infrasturucture Damage	68.2	95.5	131.6	177.0	217.1	245.4
7 Indirect Damage	26.3	36.8	50.7	68.3	83.7	94.7
Total	289.5	405.0	558.2	751.1	921.0	1,041.2
Projection of Total Value						
2000	419.4	590.2	816.7	1,099.8	1,344.4	1,517.5
2010	564.7	798.5	1,108.8	1,493.9	1,821.6	2,053.6
2020	761.0	1,081.6	1,507.0	2,031.8	2,471.2	2,782.2

Remark: *1 Including the water surface such as river.

Table 2.12 Damageable Property by Flood Return Period in Iloilo River

Item	Return Period (Year)					
	2	5	10	20	50	100
I. Affected Population and Damageable Properties						
1 Affected Population	6,616	10,260	14,066	18,128	37,864	57,364
2 Area Inundated (sq.km.)*1	2	4	6	6	9	12
3 Assets Inundated						
1) Dwelling	1,199	1,853	2,566	3,343	7,024	10,596
2) Industrial Establishment	9	14	23	37	80	112
3) Service Establishment	53	97	206	364	837	1,173
4) Palay Field (ha)	8	17	35	47	84	105
5) Fishpond (ha)	96	180	35	263	333	394
II. Estimated Value of Damageable Property (Unit: Million Pesos)						
1 Dwelling	7.105	17.589	29.536	34.129	62.900	106.666
2 Industrial Establishment	43.392	78.764	120.095	169.094	189.467	202.164
3 Service Establishment	14.195	20.827	35.542	45.437	52.039	58.590
4 Crop Production	0.662	0.956	1.100	1.178	1.329	1.415
5 Inland Fishery Production	1.356	1.381	1.586	1.649	1.775	1.775
Sub-Total	66.710	119.517	187.859	251.487	307.510	370.610
6 Infrasturucture Damage	23.3	41.8	65.8	88.0	107.6	129.7
7 Indirect Damage	9.0	16.1	25.4	34.0	41.5	50.0
Total	99.1	177.5	279.0	373.5	456.7	550.4
Projection of Total Value						
2000	150.9	269.4	423.1	567.4	689.8	825.6
2010	211.4	376.5	590.9	793.6	960.6	1,143.3
2020	296.4	526.5	825.9	1,110.5	1,338.5	1,584.8

Remark: *1 Including the water surface such as river.

Table 2.13 Damageable Property by Flood Return Period in Bulacao River Basin

Item	Return Period (Year)					
	2	5	10	20	50	100
I. Affected Population and Damageable Properties						
1 Affected Population	6,340	7,265	7,265	7,648	8,036	8,036
2 Area Inundated (sq.km.)*1	2.3	2.6	2.6	2.6	2.7	2.7
3 Assets Inundated						
1) Dwelling	1,196	1,371	1,371	1,443	1,516	1,516
2) Industrial Establishment	53	61	61	64	67	67
3) Service Establishment	87	100	100	105	110	110
4) Palay Field (ha)	0	0	0	0	0	0
5) Fishpond (ha)	0	0	0	0	0	0
II. Estimated Value of Damageable Property (Unit: Million Pesos in Economic Prices)						
1 Dwelling	2.9	4.1	5.5	5.7	6.5	8.0
2 Industrial Establishment	23.0	39.0	43.0	49.0	53.1	55.5
3 Service Establishment	3.9	6.7	7.3	8.3	9.0	9.4
4 Crop Production	0.0	0.0	0.0	0.0	0.0	0.0
5 Inland Fishery Production	0.0	0.0	0.0	0.0	0.0	0.0
Sub-Total	29.8	49.8	55.8	63.0	68.7	73.0
6 Infrastructure Damage	10.4	17.4	19.5	22.0	24.0	25.5
7 Indirect Damage	4.0	6.7	7.5	8.5	9.3	9.9
Total	44.3	74.0	82.9	93.5	102.0	108.4
Projection of Total Value						
2000	77.8	130.1	145.6	164.3	179.1	190.2
2010	122.4	205.0	229.2	258.7	282.0	299.1
2020	192.7	323.0	360.8	407.4	444.0	470.5

Remark: *1 Including the water surface such as river.

Table 2.14 Damageable Property by Flood Return Period in Kinalumsan River Basin

Item	Return Period (Year)					
	2	5	10	20	50	100
I. Affected Population and Damageable Properties						
1 Affected Population	39,281	41,369	44,801	92,521	93,852	93,852
2 Area Inundated (sq.km.)*1	1.6	1.7	1.8	4.3	4.4	4.4
3 Assets Inundated						
1) Dwelling	7,412	7,805	8,453	17,457	17,708	17,708
2) Industrial Establishment	0	4	4	5	5	5
3) Service Establishment	539	568	615	1,275	1,293	1,293
4) Palay Field (ha)	7	8	8	23	23	23
5) Fishpond (ha)	0	0	0	0	0	0
II. Estimated Value of Damageable Property (Unit: Million Pesos in Economic Prices)						
1 Dwelling	9.9	34.2	59.2	77.9	91.0	98.5
2 Industrial Establishment	0.0	0.0	3.2	4.0	4.0	6.4
3 Service Establishment	33.6	48.6	58.9	104.8	128.5	134.2
4 Crop Production	0.0	0.0	0.0	0.0	0.0	0.0
5 Inland Fishery Production	0.0	0.0	0.0	0.0	0.0	0.0
Sub-Total	43.4	82.8	121.3	186.7	223.5	239.0
6 Infrasturucture Damage	15.2	29.0	42.4	65.3	78.2	83.7
7 Indirect Damage	5.9	11.2	16.4	25.2	30.2	32.3
Total	64.5	123.0	180.1	277.3	331.9	354.9
Projection of Total Value						
2000	112.2	210.7	306.7	474.9	569.0	608.2
2010	175.2	325.2	471.1	732.8	878.6	938.8
2020	273.8	502.5	724.5	1,132.0	1,358.1	1,450.8

Remark: *1 Including the water surface such as river.

Table 2.15 Damageable Property by Flood Return Period in Guadalupe River Basin

Item	Return Period (Year)					
	2	5	10	20	50	100
I. Affected Population and Damageable Properties						
1 Affected Population	40,260	52,641	53,992	83,586	102,273	106,434
2 Area Inundated (sq.km.)*1	1.3	1.8	1.8	3.2	3.8	3.9
3 Assets Inundated						
1) Dwelling	7,596	9,932	10,187	15,771	19,297	20,082
2) Industrial Establishment	6	6	6	27	27	27
3) Service Establishment	557	727	746	1,155	1,411	1,468
4) Palay Field (ha)	0	0	0	0	0	0
5) Fishpond (ha)	0	0	0	0	0	0
II. Estimated Value of Damageable Property (Unit: Million Pesos in Economic Prices)						
1 Dwelling	18.7	55.1	73.0	106.9	142.7	167.9
2 Industrial Establishment	0.0	2.4	2.4	23.8	32.1	33.8
3 Service Establishment	34.9	49.5	67.8	93.3	122.0	147.1
4 Crop Production	0.0	0.0	0.0	0.0	0.0	0.0
5 Inland Fishery Production	0.0	0.0	0.0	0.0	0.0	0.0
Sub-Total	53.6	107.0	143.2	224.0	296.8	348.8
6 Infrasturucture Damage	18.8	37.4	50.1	78.4	103.9	122.1
7 Indirect Damage	7.2	14.4	19.3	30.2	40.1	47.1
Total	79.6	158.8	212.6	332.6	440.7	518.0
Projection of Total Value						
2000	137.0	269.9	361.4	567.0	750.9	882.6
2010	212.4	413.9	554.4	871.6	1,154.1	1,356.5
2020	329.4	635.5	851.4	1,341.3	1,775.6	2,087.0

Remark: *1 Including the water surface such as river.

Table 2.16 Damageable Property by Flood Return Period in Lahug River Basin

Item	Return Period (Year)					
	2	5	10	20	50	100
I. Affected Population and Damageable Properties						
1 Affected Population	39,510	46,760	53,202	55,473	58,509	62,865
2 Area Inundated (sq.km.)*1	1.1	1.6	2.1	2.2	2.4	2.7
3 Assets Inundated						
1) Dwelling	7,455	8,823	10,038	10,467	11,039	11,861
2) Industrial Establishment	3	3	10	10	12	15
3) Service Establishment	544	644	733	765	806	866
4) Palay Field (ha)	0	0	0	0	0	0
5) Fishpond (ha)	0	0	0	0	0	0
II. Estimated Value of Damageable Property (Unit: Million Pesos)						
1 Dwelling	28.9	41.3	44.3	52.0	104.1	130.7
2 Industrial Establishment	0.0	2.4	7.9	7.9	10.3	13.7
3 Service Establishment	35.5	53.3	61.0	65.6	81.7	101.5
4 Crop Production	0.0	0.0	0.0	0.0	0.0	0.0
5 Inland Fishery Production	0.0	0.0	0.0	0.0	0.0	0.0
Sub-Total	64.4	97.0	113.3	125.5	196.1	245.9
6 Infrasturucture Damage	22.5	33.9	39.6	43.9	68.6	86.1
7 Indirect Damage	8.7	13.1	15.3	16.9	26.5	33.2
Total	95.6	144.0	168.2	186.3	291.2	365.2
Projection of Total Value						
2000	163.3	246.4	288.7	319.2	494.2	619.8
2010	251.5	380.0	446.2	492.6	757.1	949.5
2020	387.7	586.8	690.4	761.2	1,161.1	1,456.1

Remark: *1 Including the water surface such as river.

Table 2.17 Damageable Property by Flood Return Period in Subang Daku River Basin

Item	Return Period (Year)					
	2	5	10	20	50	100
I. Affected Population and Damageable Properties						
1 Affected Population	3,665	4,586	5,430	6,114	6,114	6,114
2 Area Inundated (sq.km.)*1	1.6	2.0	2.3	2.5	2.6	2.6
3 Assets Inundated						
1) Dwelling	692	865	1,024	1,154	1,154	1,154
2) Industrial Establishment	14	14	14	20	20	20
3) Service Establishment	50	63	75	85	85	85
4) Palay Field (ha)	11	11	11	12	12	12
5) Fishpond (ha)	0	0	0	0	0	0
II. Estimated Value of Damageable Property (Unit: Million Pesos in Economic Prices)						
1 Dwelling	6.7	9.3	12.1	16.8	18.6	22.7
2 Industrial Establishment	34.9	45.8	48.8	54.2	71.9	73.7
3 Service Establishment	6.1	10.0	11.6	13.7	17.0	17.3
4 Crop Production	0.0	0.0	0.0	0.0	0.0	0.0
5 Inland Fishery Production	0.0	0.0	0.0	0.0	0.0	0.0
Sub-Total	47.7	65.1	72.5	84.7	107.5	113.8
6 Infrasturucture Damage	16.7	22.8	25.4	29.6	37.6	39.8
7 Indirect Damage	6.4	8.8	9.8	11.4	14.5	15.4
Total	70.9	96.7	107.7	125.8	159.7	169.0
Projection of Total Value						
2000	124.1	169.2	188.2	219.2	278.8	294.4
2010	194.8	265.7	295.0	342.9	436.9	460.6
2020	306.0	417.2	462.6	536.7	684.9	720.9

Remark: *1 Including the water surface such as river.

Table 2.18 Damageable Property by Flood Return Period in Ormoc City

Item	Return Period (Year)					
	2	5	10	20	50	100
I. Affected Population and Damageable Properties						
1 Affected Population	20,235	21,570	21,570	21,570	21,570	21,570
2 Area Inundated (sq.km.)*2	2.2	2.4	2.4	2.4	2.4	2.4
3 Assets Inundated						
1) Dwelling	3,818	4,070	4,070	4,070	4,070	4,070
2) Industrial Establishment	12	17	17	17	17	17
3) Service Establishment	280	298	298	298	298	298
4) Palay Field (ha)	6	15	15	15	15	15
5) Fishpond (ha)	0	0	0	0	0	0
II. Estimated Value of Damageable Property (Unit: Million Pesos)						
1 Dwelling	31.3	62.1	71.2	83.1	91.7	93.4
2 Industrial Establishment	11.1	18.7	20.3	22.2	22.8	25.1
3 Service Establishment	29.1	44.5	46.7	48.5	55.1	57.7
4 Crop Production	0.0	0.0	0.0	0.0	0.0	0.0
5 Inland Fishery Production	0.0	0.0	0.0	0.0	0.0	0.0
Sub-Total	71.5	125.4	138.2	153.9	169.7	176.2
6 Infrasturucture Damage	25.0	43.9	48.4	53.9	59.4	61.7
7 Indirect Damage	9.7	16.9	18.7	20.8	22.9	23.8
Total	106.2	186.2	205.3	228.5	252.0	261.7
Projection of Total Value						
2000	144.9	253.0	278.4	309.4	341.1	354.6
2010	186.0	323.4	355.5	394.4	434.8	452.3
2020	238.9	413.9	454.4	503.2	554.8	577.5

Remark : *1 Existing assets in 1994, which have the maximum possibility of being damaged.
*2 Including the water surface such as river.

Table 2.19 Damageable Property of Drainage Rehabilitation Area by Return Period in Iloilo City

Item	Return Period (Year)			
	1 *1	2	3	5
I. Affected Population and Damageable Properties				
1 Affected Population	2,678	2,898	2,935	2,997
2 Area Inundated (sq.km.)*2	0.3	0.5	0.6	0.6
3 Assets Inundated				
1) Dwelling	505	547	554	2,997
2) Industrial Establishment	1	1	1	1
3) Service Establishment	50	68	72	77
II. Estimated Value of Damageable Property (Unit: Million Pesos)				
1 Dwelling	6.9	7.4	7.5	7.6
2 Industrial Establishment	1.8	2.4	2.5	2.6
3 Service Establishment	0.3	0.6	0.7	0.8
Sub-Total	9.1	10.4	10.7	11.0
4 Infrasturucture Damage	3.2	3.6	3.7	3.9
5 Indirect Damage	1.2	1.4	1.4	1.5
Total	13.5	15.4	15.9	16.4
Projection of Total Value				
2000	19.4	22.3	23.0	23.8
2010	29.2	33.4	34.4	35.6
2020	41.3	47.2	48.5	50.2

Remark : *1 Calculated as recurrence interval of 1.01 years
*2 Including the water surface such as river.

Table 2.20 Damageable Property of Drainage Rehabilitan Area by Return Period in Cebu City

Item	Return Period (Year)			
	1 *1	2	3	5
I. Affected Population and Damageable Properties				
1 Affected Population	13,668	18,465	18,516	18,618
2 Area Inundated (sq.km.)*2	0.7	0.9	0.9	1.0
3 Assets Inundated				
1) Dwelling	2,579	3,484	3,494	3,513
2) Industrial Establishment	12	15	15	15
3) Service Establishment	187	253	253	255
II. Estimated Value of Damageable Property (Unit: Million Pesos)				
1 Dwelling	32.4	47.7	47.8	48.1
2 Industrial Establishment	17.2	21.4	21.4	21.5
3 Service Establishment	30.2	43.1	43.2	43.5
Sub-Total	79.7	112.2	112.5	113.1
4 Infrasturucture Damage	27.9	39.3	39.4	39.6
5 Indirect Damage	10.8	15.2	15.2	15.3
Total	118.4	166.7	167.1	167.9
Projection of Total Value				
2000	202.9	285.3	286.0	287.4
2010	331.6	467.0	468.1	470.4
2020	524.9	739.2	741.0	744.6

Remark : *1 Calculated as recurrence interval of 1.01 years
*2 Including the water surface such as river.

Table 2.21 Damageable Property of Drainage Rehabilitztion Area by Return Period in Ormoc City

Item	Return Period (Year)			
	1 *1	2	3	5
I. Affected Population and Damageable Properties				
1 Affected Population	127	241	216	346
2 Area Inundated (sq.km.)*2	0.02	0.03	0.03	0.03
3 Assets Inundated				
1) Dwelling	24	46	54	67
2) Industrial Establishment	1	1	1	1
3) Service Establishment	2	3	4	5
II. Estimated Value of Damageable Property (Unit: Million Pesos)				
1 Dwelling	0.3	0.5	0.5	0.5
2 Industrial Establishment	0.4	0.6	0.6	0.6
3 Service Establishment	0.3	0.5	0.5	0.5
Sub-Total	1.0	1.6	1.6	1.7
4 Infrasturucture Damage	0.4	0.6	0.6	0.6
5 Indirect Damage	0.1	0.2	0.2	0.2
Total	1.6	2.4	2.4	2.5
Projection of Total Value				
2000	2.1	3.3	3.4	3.4
2010	2.9	4.5	4.6	4.6
2020	3.8	6.0	6.0	6.0

Remark : *1 Calculated as recurrence interval of 1.01 years
*2 Including the water surface such as river.

Table 2.22 Damageable Property of Drainage rehabilitation Area by Return Period in Tacloban City

Item	Return Period (Year)			
	1 *1	2	3	5
I. Affected Population and Damageable Properties				
1 Affected Population	7,961	10,117	10,583	11,088
2 Area Inundated (sq.km.)*2	0.9	1.2	1.2	1.3
3 Assets Inundated				
1) Dwelling	1,453	1,847	1,932	2,024
2) Industrial Establishment	13	16	16	17
3) Service Establishment	116	147	154	161
II. Estimated Value of Damageable Property (Unit: Million Pesos)				
1 Dwelling	14.9	19.0	19.8	20.8
2 Industrial Establishment	18.6	23.2	24.0	24.9
3 Service Establishment	19.0	23.7	24.8	26.1
Sub-Total	52.6	65.9	68.6	71.8
4 Infrasturucture Damage	18.4	23.1	24.0	25.1
5 Indirect Damage	7.1	8.9	9.3	9.7
Total	78.1	97.8	101.9	106.6
Projection of Total Value				
2000	107.9	135.1	140.7	147.2
2010	145.4	182.2	189.7	198.4
2020	191.6	240.1	250.1	261.6

Remark : *1 Calculated as recurrence interval of 1.01 years
*2 Including the water surface such as river.

Table 3.1 Proposed Land Use Plan in Four Cities

(Unit: ha; %)

Land Use Category	Iloilo		Cebu		Tacloban		Ormoc	
	Area (ha)	Share (%)	Area (ha)	Share (%)	Area (ha)	Share (%)	Area (ha)	Share (%)
1. Built-up Area								
1) Residential Area	2,813.7	43.4	285.8	24.6	1,011.4	54.9	402.6	38.7
2) Commercial Area	619.5	9.6	467.2	40.2	257.5	14.0	117.1	11.3
3) Institutional Area	-	-	20.5	1.8	76.3	4.1	70.2	6.8
4) Industrial Area	669.9	10.3	254.5	21.9	99.4	5.4	299.2	28.8
Sub-total	4,103.1	63.3	1,028.0	88.5	1,444.5	78.4	889.1	85.6
2. Natural/Green Space Area								
1) Park, Open-spaces, etc.	728.9	11.2	86.7	7.5	235.0	12.8	150.0	14.4
2) Agricultural Land	1,290.2	19.9	-	-	161.9	8.8	-	-
- Crop Field	1,207.1	18.6	-	-	-	-	-	-
- Fishpond, Saltbeds	83.1	1.3	-	-	-	-	-	-
3) Grass Land/Swanp	364.2	5.6	-	-	-	-	-	-
4) Not Identified	-	-	47.1	4.1	-	-	-	-
Sub-total	2,383.3	36.7	133.8	11.5	396.9	21.6	150.0	14.4
Total	6,486.4 *1	100.0	1,161.8 *2	100.0	1,841.4 *3	100.0	1,039.1 *4	100.0

Source: Land use maps proposed by the city governments

Note: *1 Covering the entire city territory.

*2 Covering the urban Barangay classes designated by the Cebu City government.

*3 Covering the Study Area delineated by the JICA Study Team

*4 Covering the urban core only demarcated by the Ormoc City government.

Table 3.2 Population Projection: 1990 to 2020

(Unit: Thousand; %)

Area	Year				Average Annual Growth Rate (%)
	1990 *2	2000	2010	2020	1990/2020
1. Philippines	60,559	74,097	85,900	96,120	1.55
2. Iloilo Province	1,763	2,073	2,321	2,527	1.21
Iloilo City	308	353	387	415	1.00
3. Cebu Province	2,638	3,119	3,519	3,868	1.28
Cebu City	610	742	851	946	1.47
4. Leyte Province	1,484	1,727	1,934	2,125	1.21
Tacloban City	136	158	177	194	1.17
Ormoc City	129	150	168	183	1.17

Source: Philippine Population Projections 1980-2030, MEP

Note: *1 Applied the medium assumption of the Philippine Population Projection 1980-2030

*2 the 1990 census population

Table 3.3 GRDP Projection at 1985 Constant Prices: 1990 to 2020

Area	*1	Medium-term Plan Proposal		*2	*2	*2
	1990	1993	1998	2000	2010	2020
1. GDP and GRDP (Billion Pesos at 1985 Constant Prices)						
1) Philippines	715.31	708.23	1,021.49	1,127.62	1,637.33	2,377.45
2) Region VI	49.82	50.83	71.28	78.09	110.16	155.39
3) Region VII	46.63	46.55	72.94	82.37	130.39	206.40
4) Region VIII	17.61	18.06	23.72	25.52	33.64	44.34
Average Growth Rate (%/annum)						
1) Philippines	2.42	-0.33	7.60	5.07	3.80	3.80
2) Region VI	0.46	0.67	7.00	4.67	3.50	3.50
3) Region VII	0.32	-0.06	9.40	6.27	4.70	4.70
4) Region VIII	-1.65	0.84	5.60	3.73	2.80	2.80
2. Per Capita G(R)DP (Pesos at 1985 Constant Prices)						
1) Philippines	11,812	11,008	14,354	15,218	19,061	24,734
2) Region VI	9,250	9,062	11,879	12,666	16,198	20,813
3) Region VII	10,176	9,782	14,393	15,849	22,804	33,048
4) Region VIII	5,778	5,702	7,027	7,371	8,758	10,360
Per Capita G(R)DP (US$ at 1985 Constant Prices: 19.03 Pesos/US$)						
1) Philippines	621	578	754	800	1,002	1,300
2) Region VI	486	476	624	665	851	1,094
3) Region VII	535	514	756	833	1,198	1,736
4) Region VIII	304	300	369	387	460	544
Average Growth Rate (%/annum)						
1) Philippines	0.09	-2.32	5.45	3.63	2.73	2.73
2) Region VI	-1.27	-0.68	5.56	3.71	2.78	2.78
3) Region VII	1.25	-1.31	8.03	5.35	4.02	4.02
4) Region VIII	-2.48	-0.44	4.27	2.84	2.13	2.13

Source: Medium-Term Philippine Development Plan 1993-1998, 1993, NEDA

Note: *1 Real estimate in 1990

*2 Growth rate was assumed: 2/3 of the plan during 1998-2000 and 1/2 after 2000.

Table 4.1 Financial Cost and Economic Cost

(Unit: Million Pesos)

Item	Flood Control Work		Drainage Improvement	Entire City Project
	Entire River	River Basin		
I. Financial Cost				
1. Iloilo City	2,498.8	-	175.7	2,674.5
Jaro River		1,784.0	-	1,784.0
Iloilo & Mandurriao River		714.8	-	714.8
2. Cebu City	3,303.4	-	768.1	4,071.5
Bulacao River		256.1	-	256.1
Kinalumsan River		564.8	-	564.8
Guadalupe River		675.7	-	675.7
Lahug River		810.2	-	810.2
Sabang Daku River		996.6	-	996.6
3. Ormoc City	419.5	-	23.9	443.4
Anilao & Malbasag River		419.5	-	419.5
4. Tacloban City	-	-	230.0	230.0
II. Economic Cost				
1. Iloilo City	2,086.9	-	147.1	2,234.0
Jaro River		1,488.8	-	1,488.8
Iloilo & Mandurriao River		598.2	-	598.2
2. Cebu City	2,734.4	-	636.5	3,370.9
Bulacao River		212.6	-	212.6
Kinalumsan River		468.0	-	468.0
Guadalupe River		558.9	-	558.9
Lahug River		670.7	-	670.7
Sabang Daku River		824.2	-	824.2
3. Ormoc City	351.5	-	20.0	371.5
Anilao & Malbasag River		351.5	-	351.5
4. Tacloban City	-	-	191.3	191.3

Table 4.2 Benefit of Proposed Property by Flood Return Period in Jaro River Basin

(Unit: Million Pesos in Economic Terms)

Item	Return Period (Year)					
	2	5	10	20	50	100
Benefit (Reduction of Flood Damage) under Present Condition						
1 Dwelling	135.4	170.8	217.6	288.4	375.6	0.0
2 Industrial Establishment	43.4	78.8	120.1	169.1	189.5	0.0
3 Service Establishment	14.2	20.8	35.5	45.4	52.0	0.0
4 Crop Production	0.7	1.0	1.1	1.2	1.3	0.0
5 Inland Fishery Production	1.4	1.4	1.6	1.6	1.8	0.0
Sub-Total	195.0	272.7	375.9	505.8	620.2	0.0
6 Infrastructure Damage	68.2	95.5	131.6	177.0	217.1	0.0
7 Indirect Damage	26.3	36.8	50.7	68.3	83.7	0.0
Total	289.5	405.0	558.2	751.1	921.0	0.0
Annualized Value (Benefit under Present Conditions)	72.4	176.6	224.7	257.5	282.5	-
Projection of Benefit under Future Conditions						
In the year 2000	104.9	256.3	326.6	374.5	411.2	-
In the year 2010	141.2	345.6	441.0	506.1	555.8	-
In the year 2020	190.3	466.7	596.1	684.6	752.1	-

Table 4.3 Benefit of Proposed Project by Flood Return Period in Iloilo River Basin

(Unit: Million Pesos at Economic Terms)

Item	Return Period (Year)					
	2	5	10	20	50	100
Benefit (Reduction of Flood Damage) under Present Condition						
1 Dwelling	7.1	17.6	29.5	34.1	62.9	0.0
2 Industrial Establishment	43.4	78.8	120.1	169.1	189.5	0.0
3 Service Establishment	14.2	20.8	35.5	45.4	52.0	0.0
4 Crop Production	0.7	1.0	1.1	1.2	1.3	0.0
5 Inland Fishery Production	1.4	1.4	1.6	1.6	1.8	0.0
Sub-Total	66.7	119.5	187.9	251.5	307.5	0.0
6 Infrastructure Damage	23.3	41.8	65.8	88.0	107.6	0.0
7 Indirect Damage	9.0	16.1	25.4	34.0	41.5	0.0
Total	99.1	177.5	279.0	373.5	456.7	0.0
Annualized Value (Benefit under Present Conditions)	24.8	66.2	89.1	105.4	117.8	-
Projection of Benefit under Future Conditions						
In the year 2000	37.7	100.8	135.4	160.2	179.0	-
In the year 2010	52.9	141.0	189.4	224.0	250.3	-
In the year 2020	74.1	197.5	265.1	313.6	350.3	-

Table 4.4 Benefit of Proposed Project by Flood Return Period in Bulacao River Basin

(Unit: Million Pesos at Economic Terms)

Item	Return Period (Year)					
	2	5	10	20	50	100
Benefit (Reduction of Flood Damage) under Present Condition						
1 Dwelling	2.9	4.1	5.5	5.7	6.5	0.0
2 Industrial Establishment	23.0	39.0	43.0	49.0	53.1	0.0
3 Service Establishment	3.9	6.7	7.3	8.3	9.0	0.0
4 Crop Production	0.0	0.0	0.0	0.0	0.0	0.0
5 Inland Fishery Production	0.0	0.0	0.0	0.0	0.0	0.0
Sub-Total	29.8	49.8	55.8	63.0	68.7	0.0
6 Infrastructure Damage	10.4	17.4	19.5	22.0	24.0	0.0
7 Indirect Damage	4.0	6.7	7.5	8.5	9.3	0.0
Total	44.3	74.0	82.9	93.5	102.0	0.0
Annualized Value (Benefit under Present Conditions)	11.1	28.8	36.7	41.1	44.0	-
Projection of Benefit under Future Conditions						
In the year 2000	19.4	50.6	64.4	72.2	77.3	-
In the year 2010	30.6	79.7	101.4	113.6	121.7	-
In the year 2020	48.2	125.5	159.7	178.9	191.7	-

Table 4.5 Benefit of Proposed Project by Flood Return Period in Kinalumsan River Basin

(Unit: Million Pesos at Economic Terms)

Item	Return Period (Year)					
	2	5	10	20	50	100
Benefit (Reduction of Flood Damage) under Present Condition						
1 Dwelling	9.9	34.2	59.2	77.9	91.0	0.0
2 Industrial Establishment	0.0	0.0	3.2	4.0	4.0	0.0
3 Service Establishment	33.6	48.6	58.9	104.8	128.5	0.0
4 Crop Production	0.0	0.0	0.0	0.0	0.0	0.0
5 Inland Fishery Production	0.0	0.0	0.0	0.0	0.0	0.0
Sub-Total	43.4	82.8	121.3	186.7	223.5	0.0
6 Infrastructure Damage	15.2	29.0	42.4	65.3	78.2	0.0
7 Indirect Damage	5.9	11.2	16.4	25.2	30.2	0.0
Total	64.5	123.0	180.1	277.3	331.9	0.0
Annualized Value (Benefit under Present Conditions)	16.1	44.3	59.4	70.8	80.0	-
Projection of Benefit under Future Conditions						
In the year 2000	28.0	76.5	102.3	121.9	137.5	-
In the year 2010	43.8	118.9	158.7	188.8	212.9	-
In the year 2020	68.4	184.9	246.2	292.7	330.0	-

Table 4.6 Benefit of Proposed Project by Flood Return Period in Guadalupe River Basin

(Unit: Million Pesos in Economic Terms)

Item	Return Period (Year)					
	2	5	10	20	50	100
Benefit (Reduction of Flood Damage) under Present Condition						
1 Dwelling	18.7	55.1	73.0	106.9	142.7	0.0
2 Industrial Establishment	0.0	2.4	2.4	23.8	32.1	0.0
3 Service Establishment	34.9	49.5	67.8	93.3	122.0	0.0
4 Crop Production	0.0	0.0	0.0	0.0	0.0	0.0
5 Inland Fishery Production	0.0	0.0	0.0	0.0	0.0	0.0
Sub-Total	53.6	107.0	143.2	224.0	296.8	0.0
6 Infrasturucture Damage	18.8	37.4	50.1	78.4	103.9	0.0
7 Indirect Damage	7.2	14.4	19.3	30.2	40.1	0.0
Total	79.6	158.8	212.6	332.6	440.7	0.0
Annualized Value (Benefit under Present Conditions)	19.9	55.7	74.2	87.9	99.5	-
Projection of Benefit under Future Conditions						
In the year 2000	34.3	95.3	126.9	150.1	169.8	-
In the year 2010	53.1	147.0	195.5	231.1	261.5	-
In the year 2020	82.4	227.1	301.4	356.3	403.0	-

Table 4.7 Benefit of Proposed Project by Flood Return Period in Lahug River Basin

Item	Return Period (Year)					
	2	5	10	20	50	100
Benefit (Reduction of Flood Damage : Million Pesos at Economic Terms)						
1 Dwelling	28.9	41.3	44.3	52.0	104.1	0.0
2 Industrial Establishment	0.0	2.4	7.9	7.9	10.3	0.0
3 Service Establishment	35.5	53.3	61.0	65.6	81.7	0.0
4 Crop Production	0.0	0.0	0.0	0.0	0.0	0.0
5 Inland Fishery Production	0.0	0.0	0.0	0.0	0.0	0.0
Sub-Total	64.4	97.0	113.3	125.5	196.1	0.0
6 Infrastructure Damage	22.5	33.9	39.6	43.9	68.6	0.0
7 Indirect Damage	8.7	13.1	15.3	16.9	26.5	0.0
Total	95.6	144.0	168.2	186.3	291.2	0.0
Annualized Value (Benefit under Present Conditions)	23.9	59.8	75.4	84.3	91.5	-
Projection of Benefit under Future Conditions						
In the year 2000	40.8	102.3	129.0	144.2	156.4	-
In the year 2010	62.9	157.6	198.9	222.4	241.1	-
In the year 2020	96.9	243.1	306.9	343.2	372.1	-

Table 4.8 Benefit of Proposed Project by Flood Return Period
in Subang Daku River Basin

(Unit: Million Pesos in Economic Terms)

Item	Return Period (Year)					
	2	5	10	20	50	100
Benefit (Reduction of Flood Damage) under Present Condition						
1 Dwelling	6.7	9.3	12.1	16.8	18.6	0.0
2 Industrial Establishment	34.9	45.8	48.8	54.2	71.9	0.0
3 Service Establishment	6.1	10.0	11.6	13.7	17.0	0.0
4 Crop Production	0.0	0.0	0.0	0.0	0.0	0.0
5 Inland Fishery Production	0.0	0.0	0.0	0.0	0.0	0.0
Sub-Total	47.7	65.1	72.5	84.7	107.5	0.0
6 Infrastructure Damage	16.7	22.8	25.4	29.6	37.6	0.0
7 Indirect Damage	6.4	8.8	9.8	11.4	14.5	0.0
Total	70.9	96.7	107.7	125.8	159.7	0.0
Annualized Value (Benefit under Present Conditions)	17.7	42.9	53.1	58.9	63.2	-
Projection of Benefit under Future Conditions						
In the year 2000	31.0	75.0	92.9	103.1	110.6	-
In the year 2010	48.7	117.8	145.8	161.8	173.5	-
In the year 2020	76.5	185.0	229.0	254.0	272.3	-

Table 4.9 Benefit of Proposed Project by Flood Return Period in Ormoc City

(Unit: Million Pesos in Economic Terms)

Item	Return Period (Year) 2	5	10	20	50	100
Benefit (Reduction of Flood Damage) under Present Condition						
1 Dwelling	31.3	62.1	71.2	83.1	91.7	0.0
2 Industrial Establishment	11.1	18.7	20.3	22.2	22.8	0.0
3 Service Establishment	29.1	44.5	46.7	48.5	55.1	0.0
4 Crop Production	0.0	0.0	0.0	0.0	0.0	0.0
5 Inland Fishery Production	0.0	0.0	0.0	0.0	0.0	0.0
Sub-Total	71.5	125.4	138.2	153.9	169.7	0.0
6 Infrastructure Damage	25.0	43.9	48.4	53.9	59.4	0.0
7 Indirect Damage	9.7	16.9	18.7	20.8	22.9	0.0
Total	106.2	186.2	205.3	228.5	252.0	0.0
Annualized Value (Benefit under Present Conditions)	26.5	70.4	90.0	100.8	108.0	-
Projection of Benefit under Future Conditions						
In the year 2000	36.2	95.9	122.5	137.2	146.9	-
In the year 2010	46.5	122.9	156.8	175.6	188.0	-
In the year 2020	59.7	157.6	201.0	225.0	240.8	-

Table 4.10 Benefit of Proposed Project of Drainage Rehabilitation in Iloilo City

(Unit: Million Pesos in Economic Terms)

Item	Return Period (Year)			
	1 *1	2	3	5
Benefit (Reduction of Damage) under Present Condition				
1 Dwelling	6.9	7.4	7.5	7.6
2 Industrial Establishment	1.8	2.4	2.5	2.6
3 Service Establishment	0.3	0.6	0.7	0.8
Sub-Total	9.1	10.4	10.7	11.0
4 Infrastructure Damage	3.2	3.6	3.7	3.9
5 Indirect Damage	1.2	1.4	1.4	1.5
Total	13.5	15.4	15.9	16.4
Annualized Value (Benefit under Present Conditions)	0.1	7.2	9.8	11.9
Projection of Benefit under Future Conditions				
In the year 2000	0.1	10.5	14.3	17.4
In the year 2010	0.1	15.8	21.5	26.1
In the year 2020	0.2	22.3	30.3	36.9

Remark : *1 Calculated as recurrence interval of 1.01 years

Table 4.11 Benefit of Proposed Project of Drainage Rehabilitation in Cebu City

(Unit: Million Pesos in Economic Terms)

Item	Return Period (Year)			
	1 *1	2	3	5
Benefit (Reduction of Damage) under Present Condition				
1 Dwelling	32.4	47.7	47.8	48.1
2 Industrial Establishment	17.2	21.4	21.4	21.5
3 Service Establishment	30.2	43.1	43.2	43.5
Sub-Total	79.7	112.2	112.5	113.1
4 Infrastructure Damage	27.9	39.3	39.4	39.6
5 Indirect Damage	10.8	15.2	15.2	15.3
Total	118.4	166.7	167.1	167.9
Annualized Value (Benefit under Present Conditions)	0.6	70.4	98.3	120.6
Projection of Benefit under Future Conditions				
In the year 2000	1.0	123.1	170.7	208.9
In the year 2010	1.6	201.3	279.2	341.8
In the year 2020	2.6	318.6	442.0	541.0

Remark : *1 Calculated as recurrence interval of 1.01 years

Table 4.12 Benefit of Proposed Project of Drainage Rehabilitation in Ormoc City

(Unit: Million Pesos in Economic Terms)

Item	Return Period (Year)			
	1 *1	2	3	5
Benefit (Reduction of Damage) under Present Condition				
1 Dwelling	0.3	0.5	0.5	0.5
2 Industrial Establishment	0.4	0.6	0.6	0.6
3 Service Establishment	0.3	0.5	0.5	0.5
Sub-Total	1.0	1.6	1.6	1.7
4 Infrastructure Damage	0.4	0.6	0.6	0.6
5 Indirect Damage	0.1	0.2	0.2	0.2
Total	1.6	2.4	2.4	2.5
Annualized Value (Benefit under Present Conditions)	0.0	1.0	1.4	1.7
Projection of Benefit under Future Conditions				
In the year 2000	0.0	1.4	1.9	2.4
In the year 2010	0.0	1.9	2.6	3.2
In the year 2020	0.0	2.5	3.5	4.3

Remark : *1 Calculated as recurrence interval of 1.01 years

Table 4.13 Benefit of Proposed Project of Drainage Rehabilitation in Tacloban City

(Unit: Million Pesos in Economic Terms)

Item	Return Period (Year)			
	1 *1	2	3	5
Benefit (Reduction of Damage) under Present Condition				
1 Dwelling	14.9	19.0	19.8	20.8
2 Industrial Establishment	18.6	23.2	24.0	24.9
3 Service Establishment	19.0	23.7	24.8	26.1
Sub-Total	52.6	65.9	68.6	71.8
4 Infrastructure Damage	18.4	23.1	24.0	25.1
5 Indirect Damage	7.1	8.9	9.3	9.7
Total	78.1	97.8	101.9	106.6
Annualized Value (Benefit under Present Conditions)	0.4	43.5	60.1	74.0
Projection of Benefit under Future Conditions				
In the year 2000	0.5	61.3	84.3	103.5
In the year 2010	0.7	82.6	113.6	139.5
In the year 2020	0.9	108.9	149.7	183.8

Remark : *1 Calculated as recurrence interval of 1.01 years

Table 4.14 Comparison of Economic Annual Benefit

(Unit: Million Pesos)

Item	Flood Control Work		Drainage Improvement	Entire City Project
	Entire River	River Basin		
I. Under Present Conditions				
1. Iloilo City	400.3	-	11.9	412.2
Jaro River		282.5	-	-
Iloilo & Mandurriao River		117.8	-	-
2. Cebu City	378.2	-	120.6	498.8
Bulacao River		44.0	-	-
Kinalumsan River		80.0	-	-
Guadalupe River		99.5	-	-
Lahug River		91.5	-	-
Sabang Daku River		63.2	-	-
3. Ormoc City	108.0	-	1.7	109.7
Anilao & Malbasag River		108.0	-	-
4. Tacloban City	-	-	76.8	76.8
II. Under Future Conditions in the Year 2020				
1. Iloilo City	1,102.4	-	30.3	1,132.7
Jaro River		752.1	-	-
Iloilo & Mandurriao River		350.3	-	-
2. Cebu City	1,569.1	-	541.0	2,110.1
Bulacao River		191.7	-	-
Kinalumsan River		330.0	-	-
Guadalupe River		403.0	-	-
Lahug River		372.1	-	-
Sabang Daku River		272.3	-	-
3. Ormoc City	240.8	-	4.3	245.1
Anilao & Malbasag River		240.8	-	-
4. Tacloban City	-	-	190.8	190.8

Table 4.15 (1/3) Economic Cost and Benefit Stream under Present Condition

JARO RIVER IMPROVEMENT PROJECT

(Unit : Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	101.19		101.19		-101.19
2	386.33		386.33		-386.33
3	333.75		333.75		-333.75
4	333.75		333.75		-333.75
5	333.75		333.75		-333.75
6		22.15	22.15	282.50	260.35
7		22.15	22.15	282.50	260.35
8		22.15	22.15	282.50	260.35
9		22.15	22.15	282.50	260.35
10		22.15	22.15	282.50	260.35
11		22.15	22.15	282.50	260.35
:		:	:	:	:
:		:	:	:	:
53		22.15	22.15	282.50	260.35
54		22.15	22.15	282.50	260.35
55		22.15	22.15	282.50	260.35

NPV: 1,567.34 B/C: 2.27 EIRR : 13.8%

ILOILO RIVER IMPROVEMENT PROJECT

(Unit : Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	46.07		46.07		-46.07
2	102.89		102.89		-102.89
3	149.73		149.73		-149.73
4	149.73		149.73		-149.73
5	149.73		149.73		-149.73
6		10.25	10.25	117.80	107.55
7		10.25	10.25	117.80	107.55
8		10.25	10.25	117.80	107.55
9		10.25	10.25	117.80	107.55
10		10.25	10.25	117.80	107.55
11		10.25	10.25	117.80	107.55
:		:	:	:	:
:		:	:	:	:
53		10.25	10.25	117.80	107.55
54		10.25	10.25	117.80	107.55
55		10.25	10.25	117.80	107.55

NPV: 670.21 B/C: 2.35 EIRR : 14.3%

RIVER IMPROVEMENT PROJECTS IN ILOILO CITY

(Unit : Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	147.26		147.26		-147.26
2	489.22		489.22		-489.22
3	483.49		483.49		-483.49
4	483.49		483.49		-483.49
5	483.49		483.49		-483.49
6		32.40	32.40	400.30	367.90
7		32.40	32.40	400.30	367.90
8		32.40	32.40	400.30	367.90
9		32.40	32.40	400.30	367.90
10		32.40	32.40	400.30	367.90
11		32.40	32.40	400.30	367.90
:		:	:	:	:
:		:	:	:	:
53		32.40	32.40	400.30	367.90
54		32.40	32.40	400.30	367.90
55		32.40	32.40	400.30	367.90

NPV: 2,237.54 B/C: 2.29 EIRR : 13.9%

BULACAO RIVER IMPROVEMENT PROJECT

(Unit : Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	10.60		10.60		-10.60
2	92.35		92.35		-92.35
3	36.55		36.55		-36.55
4	36.55		36.55		-36.55
5	36.55		36.55		-36.55
6		2.20	2.20	44.00	41.80
7		2.20	2.20	44.00	41.80
8		2.20	2.20	44.00	41.80
9		2.20	2.20	44.00	41.80
10		2.20	2.20	44.00	41.80
11		2.20	2.20	44.00	41.80
:		:	:	:	:
:		:	:	:	:
53		2.20	2.20	44.00	41.80
54		2.20	2.20	44.00	41.80
55		2.20	2.20	44.00	41.80

NPV: 261.60 B/C: 2.50 EIRR : 14.7%

KINALUMSAN RIVER IMPROVEMENT PROJECT

(Unit : Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	20.31		20.31		-20.31
2	232.61		232.61		-232.61
3	71.68		71.68		-71.68
4	71.68		71.68		-71.68
5	71.68		71.68		-71.68
6		4.10	4.10	80.00	75.90
7		4.10	4.10	80.00	75.90
8		4.10	4.10	80.00	75.90
9		4.10	4.10	80.00	75.90
10		4.10	4.10	80.00	75.90
11		4.10	4.10	80.00	75.90
:		:	:	:	:
:		:	:	:	:
53		4.10	4.10	80.00	75.90
54		4.10	4.10	80.00	75.90
55		4.10	4.10	80.00	75.90

NPV: 409.94 B/C: 2.07 EIRR : 12.5%

GUADALUPE RIVER IMPROVEMENT PROJECT

(Unit : Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	21.39		21.39		-21.39
2	305.54		305.54		-305.54
3	77.34		77.34		-77.34
4	77.34		77.34		-77.34
5	77.34		77.34		-77.34
6		4.18	4.18	99.50	95.32
7		4.18	4.18	99.50	95.32
8		4.18	4.18	99.50	95.32
9		4.18	4.18	99.50	95.32
10		4.18	4.18	99.50	95.32
11		4.18	4.18	99.50	95.32
:		:	:	:	:
:		:	:	:	:
53		4.18	4.18	99.50	95.32
54		4.18	4.18	99.50	95.32
55		4.18	4.18	99.50	95.32

NPV: 529.91 B/C: 2.16 EIRR : 12.9%

Table 4.15 (2/3) Economic Cost and Benefit Stream under Present Condition

LAHUG RIVER IMPROVEMENT PROJECT

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	27.01		27.01		-27.01
2	353.51		353.51		-353.51
3	96.71		96.71		-96.71
4	96.71		96.71		-96.71
5	96.71		96.71		-96.71
6		5.35	5.35	91.50	86.15
7		5.35	5.35	91.50	86.15
8		5.35	5.35	91.50	86.15
9		5.35	5.35	91.50	86.15
10		5.35	5.35	91.50	86.15
11		5.35	5.35	91.50	86.15
:		:	:	:	:
:		:	:	:	:
53		5.35	5.35	91.50	86.15
54		5.35	5.35	91.50	86.15
55		5.35	5.35	91.50	86.15
NPV: 358.79		B/C: 1.65		EIRR : 10.2%	

SUBANG DAKU RIVER IMROVEMENT PROJECT

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	31.01		31.01		-31.01
2	455.63		455.63		-455.63
3	112.53		112.53		-112.53
4	112.53		112.53		-112.53
5	112.53		112.53		-112.53
6		6.03	6.03	63.20	57.17
7		6.03	6.03	63.20	57.17
8		6.03	6.03	63.20	57.17
9		6.03	6.03	63.20	57.17
10		6.03	6.03	63.20	57.17
11		6.03	6.03	63.20	57.17
:		:	:	:	:
:		:	:	:	:
53		6.03	6.03	63.20	57.17
54		6.03	6.03	63.20	57.17
55		6.03	6.03	63.20	57.17
NPV: -46.54		B/C: 0.93		EIRR : 5.7%	

RIVER IMPROVEMENT PROJECTS IN CEBU CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	110.32		110.32		-110.32
2	1,439.64		1,439.64		-1,439.64
3	394.81		394.81		-394.81
4	394.81		394.81		-394.81
5	394.81		394.81		-394.81
6		21.86	21.86	378.20	356.34
7		21.86	21.86	378.20	356.34
8		21.86	21.86	378.20	356.34
9		21.86	21.86	378.20	356.34
10		21.86	21.86	378.20	356.34
11		21.86	21.86	378.20	356.34
:		:	:	:	:
:		:	:	:	:
53		21.86	21.86	378.20	356.34
54		21.86	21.86	378.20	356.34
55		21.86	21.86	378.20	356.34
NPV: 1,513.71		B/C: 1.68		EIRR : 10.4%	

RIVER IMPROVEMENT PROJECTS IN ORMOC CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	28.44		28.44		-28.44
2	47.23		47.23		-47.23
3	91.93		91.93		-91.93
4	91.93		91.93		-91.93
5	91.93		91.93		-91.93
6		6.36	6.36	108.00	101.64
7		6.36	6.36	108.00	101.64
8		6.36	6.36	108.00	101.64
9		6.36	6.36	108.00	101.64
10		6.36	6.36	108.00	101.64
11		6.36	6.36	108.00	101.64
:		:	:	:	:
:		:	:	:	:
53		6.36	6.36	108.00	101.64
54		6.36	6.36	108.00	101.64
55		6.36	6.36	108.00	101.64
NPV: 777.79		B/C: 3.65		EIRR : 21.1%	

DRAINAGE IMPROVEMENT PROJECT IN ILOILO CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	9.65		9.65		-9.65
2	32.68		32.68		-32.68
3	52.37		52.37		-52.37
4	52.37		52.37		-52.37
5		2.55	2.55	11.90	9.35
6		2.55	2.55	11.90	9.35
7		2.55	2.55	11.90	9.35
8		2.55	2.55	11.90	9.35
9		2.55	2.55	11.90	9.35
10		2.55	2.55	11.90	9.35
11		2.55	2.55	11.90	9.35
:		:	:	:	:
:		:	:	:	:
53		2.55	22.43	11.90	9.35
54		2.55	22.43	11.90	9.35
55		2.55	22.43	11.90	9.35
NPV: -10.18		B/C: 0.92		EIRR : 5.6%	

DRAINAGE IMPROVEMENT PROJECT IN CEBU CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	24.89		24.89		-24.89
2	329.55		329.55		-329.55
3	141.05		141.05		-141.05
4	141.05		141.05		-141.05
5		5.75	5.75	120.60	114.85
6		5.75	5.75	120.60	114.85
7		5.75	5.75	120.60	114.85
8		5.75	5.75	120.60	114.85
9		5.75	5.75	120.60	114.85
10		5.75	5.75	120.60	114.85
11		5.75	5.75	120.60	114.85
:		:	:	:	:
:		:	:	:	:
53		5.75	5.75	120.60	114.85
54		5.75	5.75	120.60	114.85
55		5.75	5.75	120.60	114.85
NPV: 659.52		B/C: 2.23		EIRR : 14.8%	

Table 4.15 (3/3) Economic Cost and Benefit Stream under Present Condition

DRAINAGE IMPROVEMENT PROJECT IN ORMOC CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	1.40		1.40		-1.40
2	3.50		3.50		-3.50
3	7.55		7.55		-7.55
4	7.55		7.55		-7.55
5		0.37	0.37	1.70	1.33
6		0.37	0.37	1.70	1.33
7		0.37	0.37	1.70	1.33
8		0.37	0.37	1.70	1.33
9		0.37	0.37	1.70	1.33
10		0.37	0.37	1.70	1.33
11		0.37	0.37	1.70	1.33
:		:	:	:	:
:		:	:	:	:
53		0.37	0.37	1.70	1.33
54		0.37	0.37	1.70	1.33
55		0.37	0.37	1.70	1.33
NPV: -0.66		B/C: 0.96		EIRR : 5.9%	

DRAINAGE IMPROVEMENT PROJECT IN TACLOBAN CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	16.88		16.88		-16.88
2	86.94		86.94		-86.94
3	92.35		92.35		-92.35
4	92.35		92.35		-92.35
5		4.36	4.36	76.80	72.44
6		4.36	4.36	76.80	72.44
7		4.36	4.36	76.80	72.44
8		4.36	4.36	76.80	72.44
9		4.36	4.36	76.80	72.44
10		4.36	4.36	76.80	72.44
11		4.36	4.36	76.80	72.44
:		:	:	:	:
:		:	:	:	:
53		4.36	4.36	76.80	72.44
54		4.36	4.36	76.80	72.44
55		4.36	4.36	76.80	72.44
NPV: 512.28		B/C: 3.06		EIRR : 20.2%	

RIVER AND DRAINAGE IMPROVEMENT PROJECT IN ILOILO CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	156.90		156.90		-156.90
2	521.90		521.90		-521.90
3	535.86		535.86		-535.86
4	535.86		535.86		-535.86
5	483.49	2.55	486.04	11.90	-474.14
6		34.95	34.95	412.20	377.25
7		34.95	34.95	412.20	377.25
8		34.95	34.95	412.20	377.25
9		34.95	34.95	412.20	377.25
10		34.95	34.95	412.20	377.25
11		34.95	34.95	412.20	377.25
:		:	:	:	:
:		:	:	:	:
53		34.95	34.95	412.20	377.25
54		34.95	34.95	412.20	377.25
55		34.95	34.95	412.20	377.25
NPV: 1,866.63		B/C: 2.00		EIRR : 13.5%	

RIVER AND DRAINAGE IMPROVEMENT PROJECT IN CEBU CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	135.21		135.21		-135.21
2	1,769.19		1,769.19		-1,769.19
3	535.86		535.86		-535.86
4	535.86		535.86		-535.86
5	394.81	5.75	400.56	120.60	-279.96
6		27.60	27.60	498.80	471.20
7		27.60	27.60	498.80	471.20
8		27.60	27.60	498.80	471.20
9		27.60	27.60	498.80	471.20
10		27.60	27.60	498.80	471.20
11		27.60	27.60	498.80	471.20
:		:	:	:	:
:		:	:	:	:
53		27.60	27.60	498.80	471.20
54		27.60	27.60	498.80	471.20
55		27.60	27.60	498.80	471.20
NPV: 1,833.25		B/C: 1.66		EIRR : 11.2%	

RIVER AND DRAINAGE IMPROVEMENT PROJECT IN ORMOC CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	29.83		29.83		-29.83
2	50.73		50.73		-50.73
3	99.48		99.48		-99.48
4	99.48		99.48		-99.48
5	91.93	0.37	92.31	1.70	-90.61
6		6.74	6.74	109.70	102.96
7		6.74	6.74	109.70	102.96
8		6.74	6.74	109.70	102.96
9		6.74	6.74	109.70	102.96
10		6.74	6.74	109.70	102.96
11		6.74	6.74	109.70	102.96
:		:	:	:	:
:		:	:	:	:
53		6.74	6.74	109.70	102.96
54		6.74	6.74	109.70	102.96
55		6.74	6.74	109.70	102.96
NPV: 679.79		B/C: 3.19		EIRR : 20.4%	

Table 4.16 (1/3) Economic Cost and Benefit Stream under Future Condition

JARO RIVER IMPROVEMENT PROJECT

(Unit : Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	101.19		101.19		-101.19
2	386.33		386.33		-386.33
3	333.75		333.75		-333.75
4	333.75		333.75		-333.75
5	333.75		333.75		-333.75
6		22.15	22.15	411.20	389.05
7		22.15	22.15	423.78	401.63
8		22.15	22.15	436.74	414.59
9		22.15	22.15	450.10	427.95
10		22.15	22.15	463.87	441.72
11		22.15	22.15	478.06	455.91
:		:	:	:	:
:		:	:	:	:
53		22.15	22.15	1,701.92	1,679.77
54		22.15	22.15	1,754.18	1,732.03
55		22.15	22.15	1,808.05	1,785.90

NPV: 4,466.84 B/C: 4.62 EIRR : 21.4%

ILOILO RIVER IMPROVEMENT PROJECT

(Unit : Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	46.07		46.07		-46.07
2	102.89		102.89		-102.89
3	149.73		149.73		-149.73
4	149.73		149.73		-149.73
5	149.73		149.73		-149.73
6		10.25	10.25	179.00	168.75
7		10.25	10.25	185.10	174.85
8		10.25	10.25	191.41	181.16
9		10.25	10.25	197.94	187.69
10		10.25	10.25	204.69	194.44
11		10.25	10.25	211.67	201.42
:		:	:	:	:
:		:	:	:	:
53		10.25	10.25	868.13	857.88
54		10.25	10.25	897.81	887.56
55		10.25	10.25	928.50	918.25

NPV: 2,095.99 B/C: 5.21 EIRR : 23.2%

RIVER IMPROVEMENT PROJECTS IN ILOILO CITY

(Unit : Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	147.26		147.26		-147.26
2	489.22		489.22		-489.22
3	483.49		483.49		-483.49
4	483.49		483.49		-483.49
5	483.49		483.49		-483.49
6		32.40	32.40	590.20	557.80
7		32.40	32.40	608.89	576.49
8		32.40	32.40	628.17	595.77
9		32.40	32.40	648.06	615.66
10		32.40	32.40	668.58	636.18
11		32.40	32.40	689.75	657.35
:		:	:	:	:
:		:	:	:	:
53		32.40	32.40	2,566.88	2,534.47
54		32.40	32.40	2,648.50	2,616.10
55		32.40	32.40	2,732.72	2,700.32

NPV: 6,562.29 B/C: 4.79 EIRR : 21.9%

BULACAO RIVER IMPROVEMENT PROJECT

(Unit : Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	10.60		10.60		-10.60
2	92.35		92.35		-92.35
3	36.55		36.55		-36.55
4	36.55		36.55		-36.55
5	36.55		36.55		-36.55
6		2.20	2.20	77.30	75.10
7		2.20	2.20	80.89	78.68
8		2.20	2.20	84.65	82.44
9		2.20	2.20	88.58	86.37
10		2.20	2.20	92.69	90.48
11		2.20	2.20	96.99	94.79
:		:	:	:	:
:		:	:	:	:
53		2.20	2.20	653.76	651.55
54		2.20	2.20	684.15	681.94
55		2.20	2.20	715.95	713.75

NPV: 1,149.99 B/C: 7.58 EIRR : 26.1%

KINALUMSAN RIVER IMPROVEMENT PROJECT

(Unit : Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	20.31		20.31		-20.31
2	232.61		232.61		-232.61
3	71.68		71.68		-71.68
4	71.68		71.68		-71.68
5	71.68		71.68		-71.68
6		4.10	4.10	137.50	133.40
7		4.10	4.10	143.64	139.55
8		4.10	4.10	150.06	145.97
9		4.10	4.10	156.77	152.67
10		4.10	4.10	163.78	159.68
11		4.10	4.10	171.10	167.00
:		:	:	:	:
:		:	:	:	:
53		4.10	4.10	1,077.52	1,073.43
54		4.10	4.10	1,125.80	1,121.70
55		4.10	4.10	1,176.24	1,172.14

NPV: 1,916.08 B/C: 6.00 EIRR : 22.6%

GUADALUPE RIVER IMPROVEMENT PROJECT

(Unit : Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	21.39		21.39		-21.39
2	305.54		305.54		-305.54
3	77.34		77.34		-77.34
4	77.34		77.34		-77.34
5	77.34		77.34		-77.34
6		4.18	4.18	169.80	165.62
7		4.18	4.18	177.29	173.12
8		4.18	4.18	185.12	180.94
9		4.18	4.18	193.28	189.11
10		4.18	4.18	201.81	197.64
11		4.18	4.18	210.72	206.54
:		:	:	:	:
:		:	:	:	:
53		4.18	4.18	1,295.55	1,291.38
54		4.18	4.18	1,352.82	1,348.64
55		4.18	4.18	1,412.61	1,408.43

NPV: 2,359.58 B/C: 6.17 EIRR : 22.8%

Table 4.16 (2/3) Economic Cost and Benefit Stream under Future Condition

LAHUG RIVER IMPROVEMENT PROJECT

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	27.02		27.02		-27.02
2	353.56		353.56		-353.56
3	96.71		96.71		-96.71
4	96.71		96.71		-96.71
5	96.71		96.71		-96.71
6		5.35	5.35	156.40	151.05
7		5.35	5.35	163.32	157.97
8		5.35	5.35	170.54	165.19
9		5.35	5.35	178.08	172.73
10		5.35	5.35	185.96	180.61
11		5.35	5.35	194.19	188.84
:		:	:	:	:
:		:	:	:	:
53		5.35	5.35	1,200.90	1,195.55
54		5.35	5.35	1,254.16	1,248.81
55		5.35	5.35	1,309.79	1,304.44

NPV: 2,050.13 B/C: 4.74 EIRR : 19.5%

SUBANG DAKU RIVER IMPROVEMENT PROJECT

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	31.01		31.01		-31.01
2	455.63		455.63		-455.63
3	112.53		112.53		-112.53
4	112.53		112.53		-112.53
5	112.53		112.53		-112.53
6		6.03	6.03	110.60	104.57
7		6.03	6.03	115.69	109.66
8		6.03	6.03	121.02	114.99
9		6.03	6.03	126.60	120.57
10		6.03	6.03	132.43	126.40
11		6.03	6.03	138.52	132.49
:		:	:	:	:
:		:	:	:	:
53		6.03	6.03	919.53	913.50
54		6.03	6.03	961.93	955.90
55		6.03	6.03	1,006.28	1,000.25

NPV: 1,211.83 B/C: 2.80 EIRR : 14.0%

RIVER IMPROVEMENT PROJECTS IN CEBU CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	110.32		110.32		-110.32
2	1,439.64		1,439.64		-1,439.64
3	394.81		394.81		-394.81
4	394.81		394.81		-394.81
5	394.81		394.81		-394.81
6		21.86	21.86	651.60	629.74
7		21.86	21.86	680.84	658.98
8		21.86	21.86	711.39	689.53
9		21.86	21.86	743.32	721.46
10		21.86	21.86	776.67	754.81
11		21.86	21.86	811.52	789.67
:		:	:	:	:
:		:	:	:	:
53		21.86	21.86	5,145.50	5,123.64
54		21.86	21.86	5,376.88	5,355.02
55		21.86	21.86	5,618.66	5,596.80

NPV: 8,687.35 B/C: 4.89 EIRR : 19.8%

RIVER IMPROVEMENT PROJECTS IN ORMOC CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	28.44		28.44		-28.44
2	47.23		47.23		-47.23
3	91.93		91.93		-91.93
4	91.93		91.93		-91.93
5	91.93		91.93		-91.93
6		6.36	6.36	146.90	140.54
7		6.36	6.36	150.57	144.21
8		6.36	6.36	154.33	147.97
9		6.36	6.36	158.18	151.82
10		6.36	6.36	162.13	155.77
11		6.36	6.36	166.18	159.82
:		:	:	:	:
:		:	:	:	:
53		6.36	6.36	469.79	463.43
54		6.36	6.36	481.56	475.20
55		6.36	6.36	493.63	487.27

NPV: 1,608.61 B/C: 6.49 EIRR : 28.6%

DRAINAGE IMPROVEMENT PROJECT IN ILOILO CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	9.65		9.65		-9.65
2	32.68		32.68		-32.68
3	52.37		52.37		-52.37
4	52.37		52.37		-52.37
5		2.55	2.55	16.33	13.78
6		2.55	2.55	17.40	14.85
7		2.55	2.55	18.12	15.57
8		2.55	2.55	18.87	16.32
9		2.55	2.55	19.65	17.10
10		2.55	2.55	20.46	17.91
11		2.55	2.55	21.31	18.76
:		:	:	:	:
:		:	:	:	:
53		2.55	2.55	90.79	88.24
54		2.55	2.55	93.99	91.44
55		2.55	2.55	97.30	94.75

NPV: 128.46 B/C: 2.00 EIRR : 12.7%

DRAINAGE IMPROVEMENT PROJECT IN CEBU CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	24.89		24.89		-24.89
2	329.55		329.55		-329.55
3	141.05		141.05		-141.05
4	141.05		141.05		-141.05
5		5.75	5.75	190.62	184.88
6		5.75	5.75	208.90	203.15
7		5.75	5.75	219.44	213.70
8		5.75	5.75	230.52	224.77
9		5.75	5.75	242.15	236.41
10		5.75	5.75	254.37	248.63
11		5.75	5.75	267.21	261.47
:		:	:	:	:
:		:	:	:	:
53		5.75	5.75	1,785.27	1,779.52
54		5.75	5.75	1,869.16	1,863.41
55		5.75	5.75	1,956.99	1,951.24

NPV: 2,983.25 B/C: 6.56 EIRR : 26.5%

Table 4.16 (3/3) Economic Cost and Benefit Stream under Future Condition

DRAINAGE IMPROVEMENT PROJECT IN ORMOC CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	1.40		1.40		-1.40
2	3.50		3.50		-3.50
3	7.55		7.55		-7.55
4	7.55		7.55		-7.55
5		0.37	0.37	2.27	1.89
6		0.37	0.37	2.40	2.03
7		0.37	0.37	2.47	2.10
8		0.37	0.37	2.54	2.17
9		0.37	0.37	2.62	2.24
10		0.37	0.37	2.69	2.32
11		0.37	0.37	2.77	2.40
:		:	:	:	:
:		:	:	:	:
53		0.37	0.37	9.27	8.90
54		0.37	0.37	9.55	9.18
55		0.37	0.37	9.83	9.46

NPV: 14.30 B/C: 1.82 EIRR : 11.9%

DRAINAGE IMPROVEMENT PROJECT IN TACLOBAN CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	16.88		16.88		-16.88
2	86.94		86.94		-86.94
3	92.35		92.35		-92.35
4	92.35		92.35		-92.35
5		4.36	4.36	96.10	91.74
6		4.36	4.36	101.64	97.28
7		4.36	4.36	107.50	103.14
8		4.36	4.36	110.74	106.38
9		4.36	4.36	114.08	109.72
10		4.36	4.36	117.52	113.16
11		4.36	4.36	121.07	116.71
:		:	:	:	:
:		:	:	:	:
53		4.36	4.36	380.94	376.58
54		4.36	4.36	391.62	387.26
55		4.36	4.36	402.60	398.24

NPV: 1,125.88 B/C: 5.52 EIRR : 27.8%

RIVER AND DRAINAGE IMPROVEMENT PROJECT IN ILOILO CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	156.90		156.90		-156.90
2	521.90		521.90		-521.90
3	535.86		535.86		-535.86
4	535.86		535.86		-535.86
5	483.49	2.55	486.04	16.33	-469.71
6		34.95	34.95	607.60	572.65
7		34.95	34.95	627.01	592.06
8		34.95	34.95	647.04	612.09
9		34.95	34.95	667.71	632.76
10		34.95	34.95	689.05	654.09
11		34.95	34.95	711.06	676.11
:		:	:	:	:
:		:	:	:	:
53		34.95	34.95	2,660.86	2,625.91
54		34.95	34.95	2,745.80	2,710.85
55		34.95	34.95	2,830.02	2,795.06

NPV: 5,937.53 B/C: 4.19 EIRR : 21.3%

RIVER AND DRAINAGE IMPROVEMENT PROJECT IN CEBU CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	135.21		135.21		-135.21
2	1,769.19		1,769.19		-1,769.19
3	535.86		535.86		-535.86
4	535.86		535.86		-535.86
5	394.81	5.75	400.56	190.62	-209.93
6		27.60	27.60	860.50	832.90
7		27.60	27.60	900.28	872.68
8		27.60	27.60	941.91	914.31
9		27.60	27.60	985.47	957.86
10		27.60	27.60	1,031.05	1,003.44
11		27.60	27.60	1,078.74	1,051.13
:		:	:	:	:
:		:	:	:	:
53		27.60	27.60	7,014.65	6,987.05
54		27.60	27.60	7,333.86	7,306.26
55		27.60	27.60	7,575.65	7,548.04

NPV: 10,692.69 B/C: 4.86 EIRR : 21.1%

RIVER AND DRAINAGE IMPROVEMENT PROJECT IN ORMOC CITY

(Unit: Million Pesos)

Serial	Cost			Benefit	Balance
Year	Initial Cost	O&M Cost	Total Cost		
1	29.83		29.83		-29.83
2	50.73		50.73		-50.73
3	99.48		99.48		-99.48
4	99.48		99.48		-99.48
5	91.93	0.37	92.31	2.27	-90.04
6		6.74	6.74	149.30	142.56
7		6.74	6.74	153.04	146.30
8		6.74	6.74	156.87	150.13
9		6.74	6.74	160.80	154.06
10		6.74	6.74	164.83	158.09
11		6.74	6.74	168.96	162.22
:		:	:	:	:
:		:	:	:	:
53		6.74	6.74	479.34	472.60
54		6.74	6.74	491.40	484.66
55		6.74	6.74	503.47	496.73

NPV: 1,450.11 B/C: 5.67 EIRR : 27.8%

Table 4.17 Comparison of Economic Internal Rate of Return

(Unit: %)

Item	Flood Control Work		Drainage Improvement	Entire City Project
	Entire River	River Basin		
I. Under Future Conditions				
1. Iloilo City	21.9	-	12.7	21.3
Jaro River		21.4	-	-
Iloilo & Mandurriao River		23.2	-	-
2. Cebu City	19.8	-	26.5	21.1
Bulacao River		26.1	-	-
Kinalumsan River		22.6	-	-
Guadalupe River		22.8	-	-
Lahug River		19.5	-	-
Sabang Daku River		14.0	-	-
3. Ormoc City	28.6	-	11.9	27.8
Anilao & Malbasag River		28.6	-	-
4. Tacloban City	-	-	27.8	27.8
II. Under Present Conditions				
1. Iloilo City	13.9	-	5.6	13.5
Jaro River		13.8	-	-
Iloilo & Mandurriao River		14.3	-	-
2. Cebu City	10.4	-	14.8	11.2
Bulacao River		14.7	-	-
Kinalumsan River		12.5	-	-
Guadalupe River		12.9	-	-
Lahug River		10.2	-	-
Sabang Daku River		5.7	-	-
3. Ormoc City	21.1	-	5.9	20.4
Anilao & Malbasag River		21.1	-	-
4. Tacloban City	-	-	20.2	20.2

Table 4.18 Comparison of NPV and B/C undr Future Conditions

Item	Flood Control Work		Drainage Improvement	Entire City Project
	Entire River	River Basin		
I. NPV (Unit: Million Pesos)				
1. Iloilo City	6,562.3	-	128.5	5,937.5
Jaro River		4,466.8	-	-
Iloilo & Mandurriao River		2,096.0	-	-
2. Cebu City	8,687.4	-	2,983.3	10,362.7
Bulacao River		1,150.0	-	-
Kinalumsan River		1,916.1	-	-
Guadalupe River		2,359.6	-	-
Lahug River		2,050.1	-	-
Sabang Daku River		1,211.8	-	-
3. Ormoc City	1,608.6	-	14.3	1,450.1
Anilao & Malbasag River		1,608.6	-	-
4. Tacloban City	-	-	1,125.9	1,125.9
I. B/C				
1. Iloilo City	4.79	-	2.00	4.19
Jaro River		4.62	-	-
Iloilo & Mandurriao River		5.21	-	-
2. Cebu City	4.89	-	6.56	4.86
Bulacao River		7.56	-	-
Kinalumsan River		6.00	-	-
Guadalupe River		6.17	-	-
Lahug River		4.74	-	-
Sabang Daku River		2.80	-	-
3. Ormoc City	6.49	-	1.82	5.67
Anilao & Malbasag River		6.49	-	-
4. Tacloban City	-	-	5.52	5.52

Remark: Benefit and cost were discounted at 10%.

Table 5.1 Benefit of Proposed Project by Flod Rrtum Period in Iloilo City

(Unit: Million Pesos at Economic Terms)

Item	Estimated Value	Return Period (Year) 2	5	10	20
Benefit (Reduction of Flood Damage) under Present Condition					
1 Dwelling	8,413.2	276.9	370.3	445.6	580.7
2 Industrial Establishment	3,650.6	86.8	157.5	240.2	338.2
3 Service Establishment	2,087.9	28.4	41.7	71.1	90.9
4 Crop Production	21.1	1.3	1.9	2.2	2.4
5 Inland Fishery Production	7.2	2.7	2.8	3.2	3.3
Sub-Total	14,180.1	396.1	574.2	762.3	1,015.4
6 Infrastructure Damage	-	138.6	201.0	266.8	355.4
7 Indirect Damage	-	53.5	77.5	102.9	137.1
Total	-	588.2	852.6	1,132.0	1,507.9
Annualized Value	-	147.0	363.2	462.4	528.4
Projection of Annualized Value under Future Condition					
In the year 2000	-	212.9	526.7	671.5	768.1
In the year 2010	-	286.6	709.9	906.0	1,037.1
In the year 2020	-	386.1	957.8	1,223.8	1,402.0

Table 5.2 Benefit of Proposed Project by Flood Return Period in Ormoc City

(Unit: Million Pesos at Economic Terms)

Item	Existing Condition	Return Period (Year) 2	5	10	20
Benefit (Reduction of Flood Damage) under Present Condition					
1 Dwelling	567.5	31.3	62.1	71.2	83.1
2 Industrial Establishment	187.7	11.1	18.7	20.3	22.2
3 Service Establishment	206.4	29.1	44.5	46.7	48.5
4 Crop Production	0.4	0.0	0.0	0.0	0.0
5 Inland Fishery Production	0.0	0.0	0.0	0.0	0.0
Sub-Total	962.0	71.5	125.4	138.2	153.9
6 Infrastructure Damage	-	25.0	43.9	48.4	53.9
7 Indirect Damage	-	9.7	16.9	18.7	20.8
Total	-	106.2	186.2	205.3	228.5
Annualized Value	-	26.5	70.4	90.0	100.8
Projection of Annualized Value under Future Condition					
In the year 2000	-	36.2	95.9	122.5	137.2
In the year 2010	-	46.5	122.9	156.8	175.6
In the year 2020	-	59.7	157.6	201.0	225.0

Table 5.3 Benefit of Proposed Project of Drainage Rehabilitation in Iloilo City

(Unit: Million Pesos at Economic Terms)

Item	Return Period (Year)			
	1 *1	2	3	5
Benefit (Reduction of Flood Damage) under Present Condition				
1 Dwelling	6.9	7.4	7.5	7.6
2 Industrial Establishment	1.8	2.4	2.5	2.6
3 Service Establishment	0.3	0.6	0.7	0.8
Sub-Total	9.1	10.4	10.7	11.0
4 Infrastructure Damage	3.2	3.6	3.7	3.9
5 Indirect Damage	1.2	1.4	1.4	1.5
Total	13.5	15.4	15.9	16.4
Annualized Value	0.1	7.2	9.8	11.9
Projection of Annualized Value under Future Condition				
In the year 2000	0.1	10.5	14.3	17.4
In the year 2010	0.1	15.8	21.5	26.1
In the year 2020	0.2	22.3	30.3	36.9

Remark : *1 Calculated as recurrence interval of 1.01 years

Table 5.4 Benfit of Proposed Project of Drainage Rehabilitation in Ormoc City

(Unit: Million Pesos at Economic Terms)

Item	Return Period (Year)			
	1 *1	2	3	5
Benefit (Reduction of Flood Damage) under Present Condition				
1 Dwelling	0.3	0.5	0.5	0.5
2 Industrial Establishment	0.4	0.6	0.6	0.6
3 Service Establishment	0.3	0.5	0.5	0.5
Sub-Total	1.0	1.6	1.6	1.7
4 Infrastructure Damage	0.4	0.6	0.6	0.6
5 Indirect Damage	0.1	0.2	0.2	0.2
Total	1.6	2.4	2.4	2.5
Annualized Value	0.0	1.0	1.4	1.7
Projection of Annualized Value under Future Condition				
In the year 2000	0.0	1.4	1.9	2.4
In the year 2010	0.0	1.9	2.6	3.2
In the year 2020	0.0	2.5	3.5	4.3

Remark : *1 Calculated as recurrence interval of 1.01 years

Table 5.5 Economic Cost and Benefit Stream under Present Condition

RIVER IMPROVEMENT PROJECTS IN ILOILO CITY

(Unit : Million Pesos)

Serial Year	Year	Cost			Benefit	Balance
		Initial	O&M	Total		
1	1996	76.20		76.20		-76.20
2	1997	109.40		109.40		-109.40
3	1998	109.40		109.40		-109.40
4	1999	270.25		270.25		-270.25
5	2000	270.25		270.25		-270.25
6	2001	270.25		270.25		-270.25
7	2002		18.74	18.74	528.40	509.66
8	2003		18.74	18.74	528.40	509.66
9	2004		18.74	18.74	528.40	509.66
10	2005		18.74	18.74	528.40	509.66
11	2006		18.74	18.74	528.40	509.66
:			:	:	:	:
:			:	:	:	:
54	2049		18.74	18.74	528.40	509.66
55	2050		18.74	18.74	528.40	509.66
56	2051		18.74	18.74	528.40	509.66

NPV: 4,387.31 B/C: 6.15 EIRR : 27.8%

DRAINAGE IMPROVEMENT PROJECTS IN ILOILO CITY

(Unit : Million Pesos)

Serial Year	Year	Cost			Benefit	Balance
		Initial	O&M	Total		
1	1996	10.10		10.10		-10.10
2	1997	10.75		10.75		-10.75
3	1998	10.75		10.75		-10.75
4	1999	0.00		0.00		0.00
5	2000	53.59		53.59		-53.59
6	2001	53.59		53.59		-53.59
7	2002		2.48	2.48	11.90	9.42
8	2003		2.48	2.48	11.90	9.42
9	2004		2.48	2.48	11.90	9.42
10	2005		2.48	2.48	11.90	9.42
11	2006		2.48	2.48	11.90	9.42
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54	2049		2.48	2.48	11.90	9.42
55	2050		2.48	2.48	11.90	9.42
56	2051		2.48	2.48	11.90	9.42

NPV: 14.41 B/C: 1.14 EIRR : 5.9%

RIVER AND DRAINAGE IMPROVEMENT PROJECTS IN ILOILO CITY

(Unit : Million Pesos)

Serial Year	Year	Cost			Benefit	Balance
		Initial	O&M	Total		
1	1996	86.30		86.30		-86.30
2	1997	120.14		120.14		-120.14
3	1998	120.14		120.14		-120.14
4	1999	265.78		265.78		-265.78
5	2000	319.62		319.62		-319.62
6	2001	319.62		319.62		-319.62
7	2002		21.22	21.22	540.30	519.08
8	2003		21.22	21.22	540.30	519.08
9	2004		21.22	21.22	540.30	519.08
10	2005		21.22	21.22	540.30	519.08
11	2006		21.22	21.22	540.30	519.08
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54	2049		21.22	21.22	540.30	519.08
55	2050		21.22	21.22	540.30	519.08
56	2051		21.22	21.22	540.30	519.08

NPV: 4,409.81 B/C: 5.66 EIRR : 26.3%

RIVER IMPROVEMENT PROJECTS IN ORMOC CITY

(Unit : Million Pesos)

Serial Year	Year	Cost			Benefit	Balance
		Initial	O&M	Total		
1	1996	22.30		22.30		-22.30
2	1997	25.67		25.67		-25.67
3	1998	25.67		25.67		-25.67
4	1999	118.64		118.64		-118.64
5	2000	118.64		118.64		-118.64
6	2001		5.50	5.50	100.80	95.30
7	2002		5.50	5.50	100.80	95.30
8	2003		5.50	5.50	100.80	95.30
9	2004		5.50	5.50	100.80	95.30
10	2005		5.50	5.50	100.80	95.30
11	2006		5.50	5.50	100.80	95.30
:			:	:	:	:
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53	2048		5.50	5.50	100.80	95.30
54	2049		5.50	5.50	100.80	95.30
55	2050		5.50	5.50	100.80	95.30

NPV: 750.10 B/C: 4.01 EIRR : 23.5%

DRAINAGE IMPROVEMENT PROJECTS IN ORMOC CITY

(Unit : Million Pesos)

Serial Year	Year	Cost			Benefit	Balance
		Initial	O&M	Total		
1	1996	0.70		0.70		-0.70
2	1997	0.33		0.33		-0.33
3	1998	0.33		0.33		-0.33
4	1999	0.00		0.00		0.00
5	2000	7.04		7.04		-7.04
6	2001		0.16	0.16	1.70	1.54
7	2002		0.16	0.16	1.70	1.54
8	2003		0.16	0.16	1.70	1.54
9	2004		0.16	0.16	1.70	1.54
10	2005		0.16	0.16	1.70	1.54
11	2006		0.16	0.16	1.70	1.54
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53	2048		0.16	0.16	1.70	1.54
54	2049		0.16	0.16	1.70	1.54
55	2050		0.16	0.16	1.70	1.54

NPV: 10.31 B/C: 2.58 EIRR : 16.5%

RIVER AND DRAINAGE IMPROVEMENT PROJECTS IN ORMOC CITY

(Unit : Million Pesos)

Serial Year	Year	Cost			Benefit	Balance
		Initial	O&M	Total		
1	1996	23.30		23.30		-23.30
2	1997	26.03		26.03		-26.03
3	1998	26.03		26.03		-26.03
4	1999	120.21		120.21		-120.21
5	2000	126.91		126.91		-126.91
6	2001		5.66	5.66	102.50	96.84
7	2002		5.66	5.66	102.50	96.84
8	2003		5.66	5.66	102.50	96.84
9	2004		5.66	5.66	102.50	96.84
10	2005		5.66	5.66	102.50	96.84
11	2006		5.66	5.66	102.50	96.84
:			:	:	:	:
:			:	:	:	:
53	2048		5.66	5.66	102.50	96.84
54	2049		5.66	5.66	102.50	96.84
55	2050		5.66	5.66	102.50	96.84

NPV: 758.25 B/C: 3.94 EIRR : 23.2%

Table 5.6 Economic Cost and Benefit Stream under Future Condition

RIVER IMPROVEMENT PROJECTS IN ILOILO CITY

(Unit : Million Pesos)

Serial	Year	Cost			Benefit	Balance
Year		Initial	O&M	Total		
1	1996	76.20		76.20		-76.20
2	1997	109.40		109.40		-109.40
3	1998	109.40		109.40		-109.40
4	1999	270.25		270.25		-270.25
5	2000	270.25		270.25		-270.25
6	2001	270.25		270.25		-270.25
7	2002		18.74	18.74	815.64	796.90
8	2003		18.74	18.74	840.50	821.77
9	2004		18.74	18.74	866.12	847.39
10	2005		18.74	18.74	892.52	873.79
11	2006		18.74	18.74	919.73	900.99
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:			:	:	:	:
54	2049		18.74	18.74	3,360.76	3,342.02
55	2050		18.74	18.74	3,463.62	3,444.88
56	2051		18.74	18.74	3,569.63	3,550.89

NPV: 10,441.94 B/C: 13.26 EIRR : 38.6%

DRAINAGE IMPROVEMENT PROJECTS IN ILOILO CITY

(Unit : Million Pesos)

Serial	Year	Cost			Benefit	Balance
Year		Initial	O&M	Total		
1	1996	10.10		10.10		-10.10
2	1997	10.75		10.75		-10.75
3	1998	10.75		10.75		-10.75
4	1999	0.00		0.00		0.00
5	2000	53.59		53.59		-53.59
6	2001	53.59		53.59		-53.59
7	2002		2.48	2.48	18.87	16.39
8	2003		2.48	2.48	19.65	17.17
9	2004		2.48	2.48	20.46	17.98
10	2005		2.48	2.48	21.31	18.83
11	2006		2.48	2.48	22.19	19.71
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:			:	:	:	:
54	2049		2.48	2.48	100.73	98.24
55	2050		2.48	2.48	104.28	101.79
56	2051		2.48	2.48	107.95	105.47

NPV: 183.92 B/C: 2.78 EIRR : 13.9%

RIVER AND DRAINAGE IMPROVEMENT PROJECTS IN ILOILO CITY

(Unit : Million Pesos)

Serial	Year	Cost			Benefit	Balance
Year		Initial	O&M	Total		
1	1996	86.30		86.30		-86.30
2	1997	120.14		120.14		-120.14
3	1998	120.14		120.14		-120.14
4	1999	265.78		265.78		-265.78
5	2000	319.62		319.62		-319.62
6	2001	319.62		319.62		-319.62
7	2002		21.22	21.22	834.51	813.29
8	2003		21.22	21.22	860.15	838.93
9	2004		21.22	21.22	886.59	865.37
10	2005		21.22	21.22	913.83	892.61
11	2006		21.22	21.22	941.92	920.70
:			:	:	:	:
:			:	:	:	:
54	2049		21.22	21.22	3,461.49	3,440.27
55	2050		21.22	21.22	3,567.90	3,546.68
56	2051		21.22	21.22	3,677.58	3,656.36

NPV: 10,633.93 B/C: 12.23 EIRR : 37.0%

RIVER IMPROVEMENT PROJECTS IN ORMOC CITY

(Unit : Million Pesos)

Serial	Year	Cost			Benefit	Balance
Year		Initial	O&M	Total		
1	1996	22.60		22.60		-22.60
2	1997	25.67		25.67		-25.67
3	1998	25.67		25.67		-25.67
4	1999	118.49		118.49		-118.49
5	2000	118.49		118.49		-118.49
6	2001		5.50	5.50	140.63	135.13
7	2002		5.50	5.50	144.14	138.64
8	2003		5.50	5.50	147.74	142.25
9	2004		5.50	5.50	151.43	145.94
10	2005		5.50	5.50	155.22	149.72
11	2006		5.50	5.50	159.09	153.60
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53	2048		5.50	5.50	450.43	444.93
54	2049		5.50	5.50	461.73	456.24
55	2050		5.50	5.50	473.32	467.82

NPV: 1,571.59 B/C: 7.30 EIRR : 32.6%

DRAINAGE IMPROVEMENT PROJECTS IN ORMOC CITY

(Unit : Million Pesos)

Serial	Year	Cost			Benefit	Balance
Year		Initial	O&M	Total		
1	1996	0.70		0.70		-0.70
2	1997	0.33		0.33		-0.33
3	1998	0.33		0.33		-0.33
4	1999	0.00		0.00		0.00
5	2000	7.04		7.04		-7.04
6	2001		0.16	0.16	2.47	2.31
7	2002		0.16	0.16	2.54	2.38
8	2003		0.16	0.16	2.62	2.45
9	2004		0.16	0.16	2.69	2.53
10	2005		0.16	0.16	2.77	2.61
11	2006		0.16	0.16	2.85	2.69
:			:	:	:	:
:			:	:	:	:
53	2048		0.16	0.16	9.83	9.67
54	2049		0.16	0.16	10.13	9.96
55	2050		0.16	0.16	10.43	10.27

NPV: 27.25 B/C: 5.17 EIRR : 26.2%

RIVER AND DRAINAGE IMPROVEMENT PROJECTS IN ORMOC CITY

(Unit : Million Pesos)

Serial	Year	Cost			Benefit	Balance
Year		Initial	O&M	Total		
1	1996	23.30		23.30		-23.30
2	1997	26.03		26.03		-26.03
3	1998	26.03		26.03		-26.03
4	1999	120.21		120.21		-120.21
5	2000	126.91		126.91		-126.91
6	2001		5.66	5.66	143.10	137.43
7	2002		5.66	5.66	146.68	141.02
8	2003		5.66	5.66	150.36	144.70
9	2004		5.66	5.66	154.13	148.46
10	2005		5.66	5.66	157.99	152.33
11	2006		5.66	5.66	161.95	156.28
:			:	:	:	:
:			:	:	:	:
53	2048		5.66	5.66	460.26	454.60
54	2049		5.66	5.66	471.86	466.20
55	2050		5.66	5.66	483.76	478.09

NPV: 1,596.75 B/C: 7.19 EIRR : 32.3%

Table 7.1 Budgetary Allocation for Flood Control Project: 1994

(Unit:1000 Pesos)

	National	Region VI	Iloilo City	Region VIII	Ormoc City
(i)Budgetary Allocation for Flood Control					
Construction Budget	13,851,599.0	620,920.0	122,680.0	834,602.0	
Flood Control	1,907,000.0	69,420.0	29,000.0	28,683.0	
Flood Control/Budget	13.77%	11.18%	23.64%	3.44%	
Maintenance Budget	1,939,376.0	130,891.7	4,057.0	135,959.6	3,374.7
Flood Control	163,362.0	3,296.5	380.0	4,411.8	385.7
Flood Control/Budget	8.42%	2.52%	9.37%	3.24%	11.43%
(ii)Fractions of Budgetary Allocation for Flood Control					
National-Others					
	National	Region VI	Iloilo City	Region VIII	Ormoc City
Construction Budget	100.00%	4.48%	0.89%	6.03%	
Flood Control	100.00%	3.64%	1.52%	1.50%	
Maintenance Budget	100.00%	6.75%	0.21%	7.01%	0.17%
RegionVI-Iloilo					
	National	Region VI	Iloilo City	Region VIII	Ormoc City
Construction Budget		100.00%	19.76%		
Flood Control		100.00%	41.77%		
Maintenance Budget		100.00%	3.10%		
Flood Control		100.00%	11.53%		
RegionVIII-Ormoc					
	National	Region VI	Iloilo City	Region VIII	Ormoc City
Maintenance Budget				100.00%	2.48%
Flood Control				100.00%	8.74%

Source: DPWH, Bureau of Maintenance
DPWH 1994 Infrastructure Program RegionVI
DPWH 1994 Infrastructure Program RegionVIII